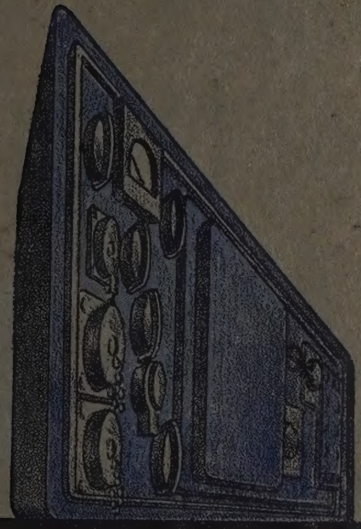
NAVSHIPS 900,841 RESTRICTED

INSTRUCTION BOOK

FOR



NAVY MODEL

RDR

RADIO RECEIVING EQUIPMENT

RCA VICTOR DIVISION
of
RADIO CORPORATION OF AMERICA
Camden, New Jersey, U. S. A.

NAVY DEPARTMENT BUREAU OF SHIPS

ERRATUM
IN IB-38387-WXYZ1
RDR RECEIVER EQUIPMENT (CRV-46283)

(This erratum supersedes erratum WXYZ1-f)

To be inserted in: Combined Parts and Spare Parts List and
Instruction Book IB-38387

TABLE 8-2

A-801 - Change Desc. to - Vibration mount; sq. mtg, 1-1/4" lg x 1-1/4" wd x 19/32" h overall, cushion, neoprene, durometer 50-60, 7/8" diam x 19/32" thk, plate mtd, brass center spacer w/0.173" diam bolt hole, four mtg holes 0.128" diam on 1" x 1" centers
Change ASN to - 2Z8402-38
Change Dwg. No. to - 8858159-501
B-602B- Change Total No. per Equip. to - 1
B-602C- Total No. per Equip. - Add quantity - 2
C-201 - Change ASN to - 3D9009V-15
C-202 - Change ASN to - 3D9010VE3-2
C-203 - Add ASN - 3D9006VE7-1
C-206 - Change ASN to - 3D9010VE3-2
C-210 - Change ASN to - 3D9010VE3-2
C-214 - Change ASN to - 3D9010VE3-2
C-218 - Change ASN to - 3D9010VE3-2
C-248 - Change Navy Type No. to -482814-10
C-301 to C-310 incl. - Change Navy Type No. to -483936-2-1/2
C-312, 313, 317, 321, 324, 331 to 335 incl. - Change Navy Type No. to -482814-10
C-505 - Change ASN to - 3D9072VE75
C-516 - Change Total No. per Equip. to - 2
C-518, 521, 523, 527, 531, 534, 535 and 536 - Change Navy Type No. to -482814-10
D-801 - Change Spec. No. to - C75.13 1944
D-801E -Total No. per Equip. - Add quantity - 1
E-505 - Change ASN to - 3Z12050-6.3
E-507 - Change ASN to - 2Z9402.338
E-803 - Change ASN to - 2Z9402.44
H-104 - Change ASN to - 2Z4868.353
+H-118, 120, 123 to 125 incl. - Change Desc. to - ... neoprene, durometer hardness 50± 5, natural water, ...
+H-204 and H-205 - Change Desc. to - ... 50± 5, cross section ...
+H-607 - Change Desc. to - ... durometer hardness 50± 5, cross section ...
H-1004- Change ASN to - 6L3504-28-5M
L-510 - Delete entire item
L-802 - Change Total No. per Equip. to - 2

(+ Changes added to previous erratum)

RADIO CORPORATION OF AMERICA - RCA VICTOR DIVISION
Camden, New Jersey, U.S.A.

CONTRACT NXsr-60008

(Continued)

IB-38387-WXYZ1-g
8-7-46

NAVY DEPARTMENT
BUREAU OF SHIPS
WASHINGTON 25, D. C.

12 December, 1945

SECURITY NOTICE

"NAVSHIPS 900,841" is a restricted non-registered publication and shall be handled, transported, and safeguarded in accordance with U. S. Navy Regulations. When superseded by a later edition, this publication shall be destroyed.

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Extracts from this publication may be made to facilitate the preparation of other Navy instruction books and handbooks.

Copies of this publication should be obtained from the nearest Electronics Officer.

E. L. COCHRANE
Chief of Bureau

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RECORD OF CORRECTIONS MADE

CHANGE NO.	DATE	SIGNATURE OF OFFICER MAKING CORRECTION

Do Not **Use your RDR instruction book as a last resort.**

A SECTION A DAY KEEPS THE "BUGS" AWAY.

Do Not **Let minor repairs become a major overhaul or you'll tangle with the braid.**

FOLLOW PREVENTIVE PROCEDURES AND THE MAINTENANCE MANUAL IN DETAIL.

WARNING!
DANGER HIGH VOLTAGE

Do Not **Overlook warnings, cautions, and notes.**

THEY KEEP YOU OUT OF TROUBLE AND THE C. O. OUT OF YOUR HAIR.

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OPERATOR'S MAINTENANCE

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CORRECTIVE MAINTENANCE

SECTION 7

CONTRACTUAL GUARANTEE

The Contractor guarantees that at the time of delivery thereof the articles provided for under this contract will be free from any defects in material or workmanship and will conform to the requirements of this contract. Except as to vacuum tubes, batteries, rubber and material normally consumed in operation, the equipment, including all spare parts, is guaranteed for a period of one (1) year from the date of its delivery to and acceptance by the Government, with the understanding that all items found to be defective as to material, workmanship or manufacture will be repaired or replaced f.o.b. any point within the continental limits of the United States designated by the Government, without delay and at no expense to the Government; provided, that such guarantee shall not obligate the Contractor to repair or replace any such defective items unless the defect appears within the aforementioned period and the Contractor is notified thereof in writing within a reasonable time and unless the defect is not the result of normal expected shelf life deterioration. This guarantee shall then continue as to corrected or replacing articles or, if only parts of such articles are corrected or replaced, to such corrected or replacing parts, until one year after the date of redelivery.

To the extent the equipment, including all parts and spare parts, as defined above, is of the Contractor's design or is of a design selected by the Contractor, it is also guaranteed, subject to the foregoing conditions, against defects in design, with the understanding that if ten per cent (10%) or more of the total quantity comprising such item furnished under the contract (but not less than two thereof) is found to be defective as to design, the entire item will be conclusively presumed to be of defective design and shall be subject to one hundred percent (100%) correction or replacement by a suitably redesigned item.

All defective items will be subject to ultimate return to the Contractor except that the exigencies of the naval service may necessitate expeditious repair of certain items in order to prevent extended interruption of communications and in such cases the return of the defective items for examination by the Contractor prior to repair or replacement shall not be mandatory. The report of a responsible authority, including details of the conditions surrounding the failure, will be acceptable as a basis for effecting expeditious adjustment under the provisions of this contractual guarantee.

INSTALLATION RECORDS

Contract No. NXsr-60008.. Dated 4 May, 1944

Serial Number of equipment..

Date of acceptance by the Navy..

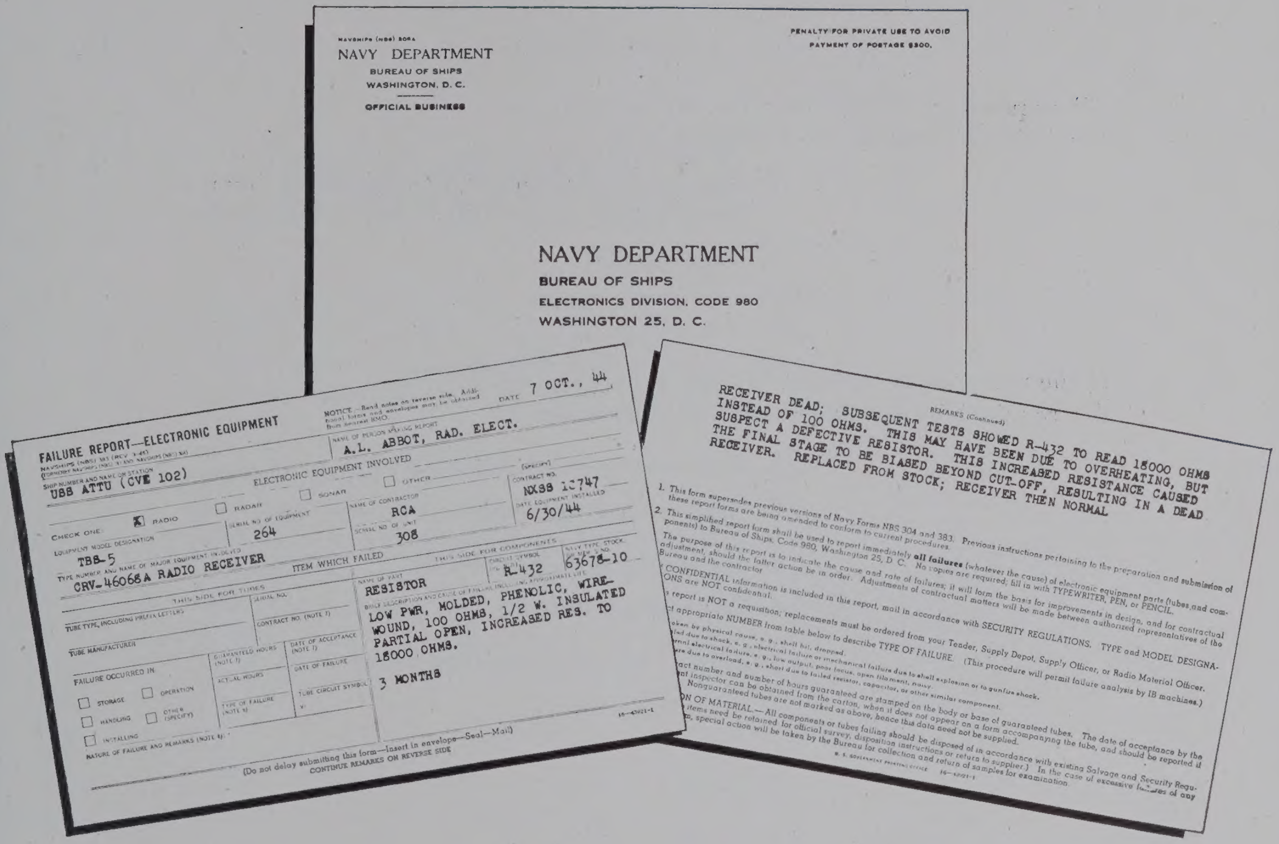
Date of delivery to contract destination..

Date of completion of installation..

Date placed in service..

Blank spaces in this book shall be filled in at the time of installation. Operating personnel shall also mark the "date placed in service" on the date plate located below the model nameplate on the equipment, using suitable methods and care to avoid damaging the equipment.

FAILURE REPORTS



NAVY DEPARTMENT
BUREAU OF SHIPS
WASHINGTON, D. C.
OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE $300.

NAVY DEPARTMENT
BUREAU OF SHIPS
ELECTRONICS DIVISION, CODE 980
WASHINGTON 25, D. C.

FAILURE REPORT—ELECTRONIC EQUIPMENT

NOTICE.—Read notes on reverse side. Additional forms and envelopes may be obtained from nearest RMO.

DATE: 7 OCT., 44

SHIP NUMBER AND NAME OR STATION: USS ATTU (CVE 102)

NAME OF PERSON MAKING REPORT: A.L. ABBOT, RAD. ELECT.

ELECTRONIC EQUIPMENT INVOLVED

CHECK ONE: ☒ RADIO ☐ RADAR ☐ SONAR ☐ OTHER (SPECIFY)

EQUIPMENT MODEL DESIGNATION: TBS-5

SERIAL NO. OF EQUIPMENT: 264

NAME OF CONTRACTOR: RCA

CONTRACT NO.: NXSS 12747

DATE EQUIPMENT INSTALLED: 6/30/44

SERIAL NO. OF UNIT: 308

TYPE NUMBER AND NAME OF MAJOR EQUIPMENT INVOLVED: CRV-46068A RADIO RECEIVER

ITEM WHICH FAILED

THIS SIDE FOR TUBES

TUBE TYPE, INCLUDING PREFIX LETTERS:

SERIAL NO.:

TUBE MANUFACTURER:

CONTRACT NO. (NOTE 7):

GUARANTEED HOURS (NOTE 7):

DATE OF ACCEPTANCE (NOTE 7):

ACTUAL HOURS:

DATE OF FAILURE:

TYPE OF FAILURE (NOTE 8):

TUBE CIRCUIT SYMBOL:

FAILURE OCCURRED IN: ☐ STORAGE ☐ OPERATION ☐ HANDLING ☐ OTHER (SPECIFY) ☐ INSTALLING

THIS SIDE FOR COMPONENTS

NAME OF PART: RESISTOR

CIRCUIT SYMBOL: R-432

NAVY TYPE STOCK OR MFR. S NO.: 63678-10

BRIEF DESCRIPTION AND CAUSE OF FAILURE INCLUDING APPROXIMATE LIFE: LOW PWR, MOLDED, PHENOLIC, WIRE-WOUND, 100 OHMS, 1/2 W. INSULATED PARTIAL OPEN, INCREASED RES. TO 18000 OHMS.

3 MONTHS

NATURE OF FAILURE AND REMARKS (NOTE 8):

(Do not delay submitting this form—Insert in envelope—Seal—Mail)
CONTINUE REMARKS ON REVERSE SIDE

REMARKS (Continued)

RECEIVER DEAD; SUBSEQUENT TESTS SHOWED R-432 TO READ 18000 OHMS INSTEAD OF 100 OHMS. THIS MAY HAVE BEEN DUE TO OVERHEATING, BUT SUSPECT A DEFECTIVE RESISTOR. THIS INCREASED RESISTANCE CAUSED THE FINAL STAGE TO BE BIASED BEYOND CUT-OFF, RESULTING IN A DEAD RECEIVER. REPLACED FROM STOCK; RECEIVER THEN NORMAL

1. This form supersedes previous versions of Navy Forms NBS 304 and 383. Previous instructions pertaining to the preparation and submission of these report forms are being amended to conform to current procedures.

2. This simplified report form shall be used to report immediately **all failures** (whatever the cause) of electronic equipment parts (tubes and components) to Bureau of Ships, Code 980, Washington 25, D. C. No copies are required; fill in with TYPEWRITER, PEN, or PENCIL.

The purpose of this report is to indicate the cause and rate of failures; it will form the basis for improvements in design, and for contractual adjustment, should the latter action be in order. Adjustments of contractual matters will be made between authorized representatives of the Bureau and the contractor.

CONFIDENTIAL information is included in this report, mail in accordance with SECURITY REGULATIONS. TYPE and MODEL DESIGNATIONS are NOT confidential.

report is NOT a requisition; replacements must be ordered from your Tender, Supply Depot, Supply Officer, or Radio Material Officer.

A FAILURE REPORT must be filled out for the failure of any part of the equipment (except tubes) whether caused by defective or worn parts, improper operation, or external influences. It should be made on Failure Report, form NBS-383 (Rev. 3-45), which has been designed to simplify this requirement. The card must be filled out and forwarded to BUSHIPS in the franked envelope which is provided. Full instructions are to be found on each card.

Use great care in filling the card out to make certain it carries adequate information. For example, under "Circuit Symbol" use the proper circuit identification taken from the schematic drawings, such as T-803, in the case of a transformer, or R-207, for a resistor. Do not substitute brevity for clarity. Use the back of the card to completely describe the cause of the failure and attach an extra piece of paper if necessary.

The purpose of this report is to inform BUSHIPS of the cause and rate of failures. The information is used by the Bureau in the design of future equipment and in the maintenance of adequate supplies to keep the present equipment going. The cards you send in, together with those from hundreds of other ships, furnish a store of information permitting the Bureau to keep in touch with the performance of the equipment of your ship and all other ships of the Navy.

This report is not a requisition. You must request the replacement of parts through your Officer-in-Charge in the usual manner.

Make certain you have a supply of Failure Report cards and envelopes on board. They may be obtained from any RMO.

ORDERING PARTS

All requests or requisitions for replacement material should include the following data:

1. Navy stock number or, when ordering from an Army supply depot, the Army stock number.
2. Name of part.

If the Navy stock number has not been assigned, the requisitions should specify the following:

1. Equipment model designation.
2. Name of part and complete description.
3. Manufacturer's designation.
4. Contractor's drawing and part number.
5. AWS, JAN, or Navy type designation.

SAFETY NOTICE

WARNING

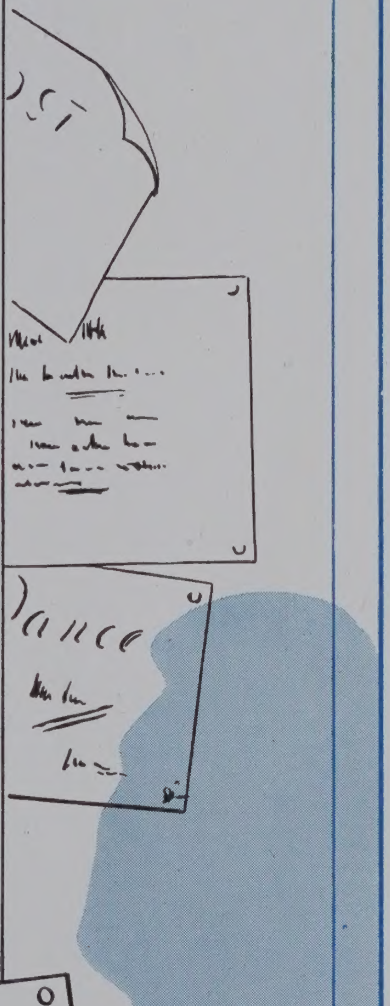
This equipment employs voltages which are dangerous if contacted by operating personnel. Extreme caution should be exercised when working with the equipment.

DON'T change tubes or make adjustments inside the equipment with high voltage supply on. Do not depend upon switches for protection but always shut off power supply. Dangerous potentials may exist in the circuits with power controls in the off position. To avoid casualties always remove power, discharge and ground circuits prior to touching them.

DON'T service or adjust alone. Under no circumstances should the equipment be serviced without the immediate presence of another person capable of rendering aid. In testing circuits, check for continuity and resistance in preference to checking voltages.

ATTENTION

Officers and operating personnel are directed to Chapter 67 of Bureau of Ships or superseding instructions on the subject of "Radio Precautions to be Observed."



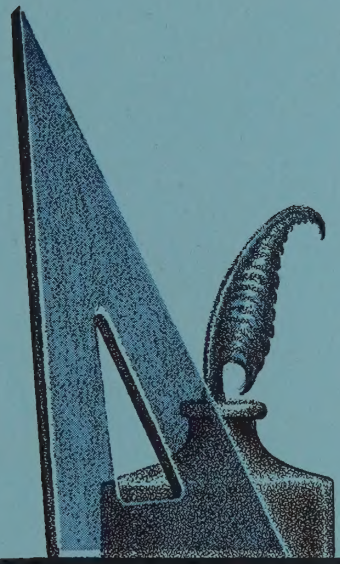
NOTICE

An approved poster illustrating the rules for resuscitation by the prone pressure method shall be prominently displayed in each radio, radar or sonar enclosure. Posters may be obtained upon request to the Bureau of Medicine and Surgery.

NAVSHIPS 900,841

GENERAL DESCRIPTION

SECTION 1



NAVY MODEL

RDR

RADIO RECEIVING EQUIPMENT

RESTRICTED

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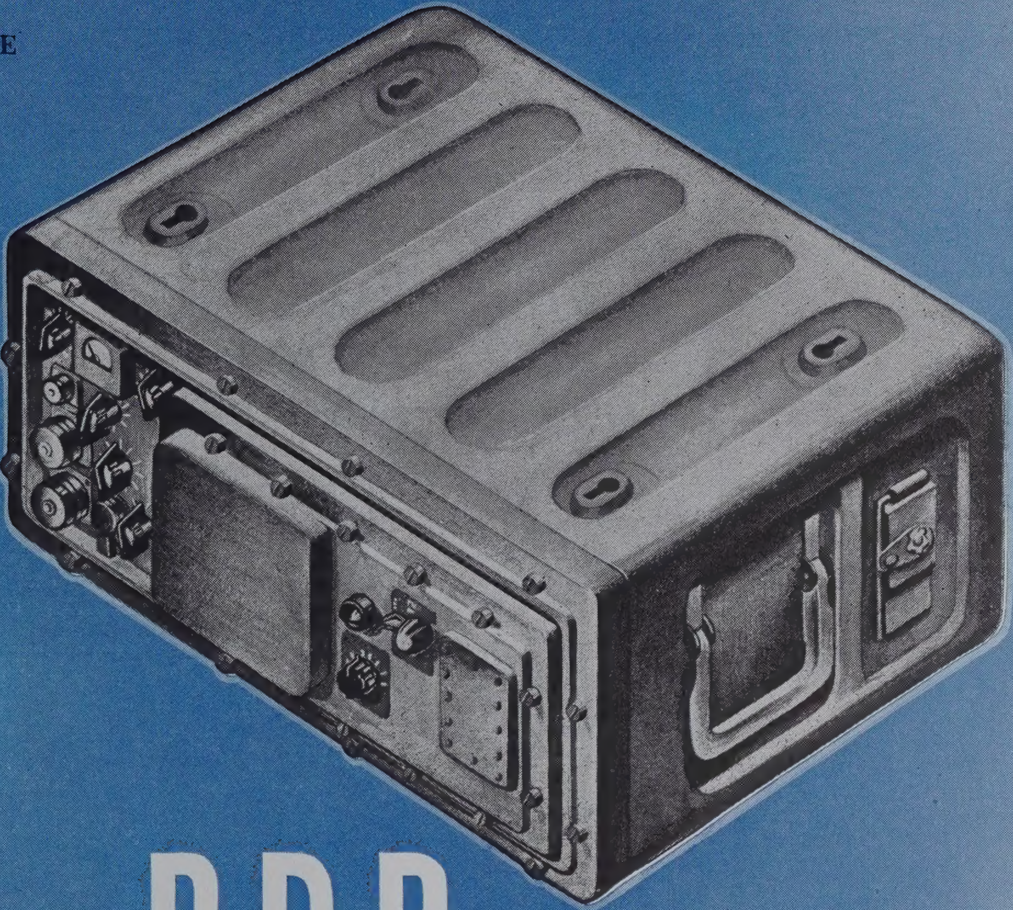
NAVY TYPE
CRV-46283



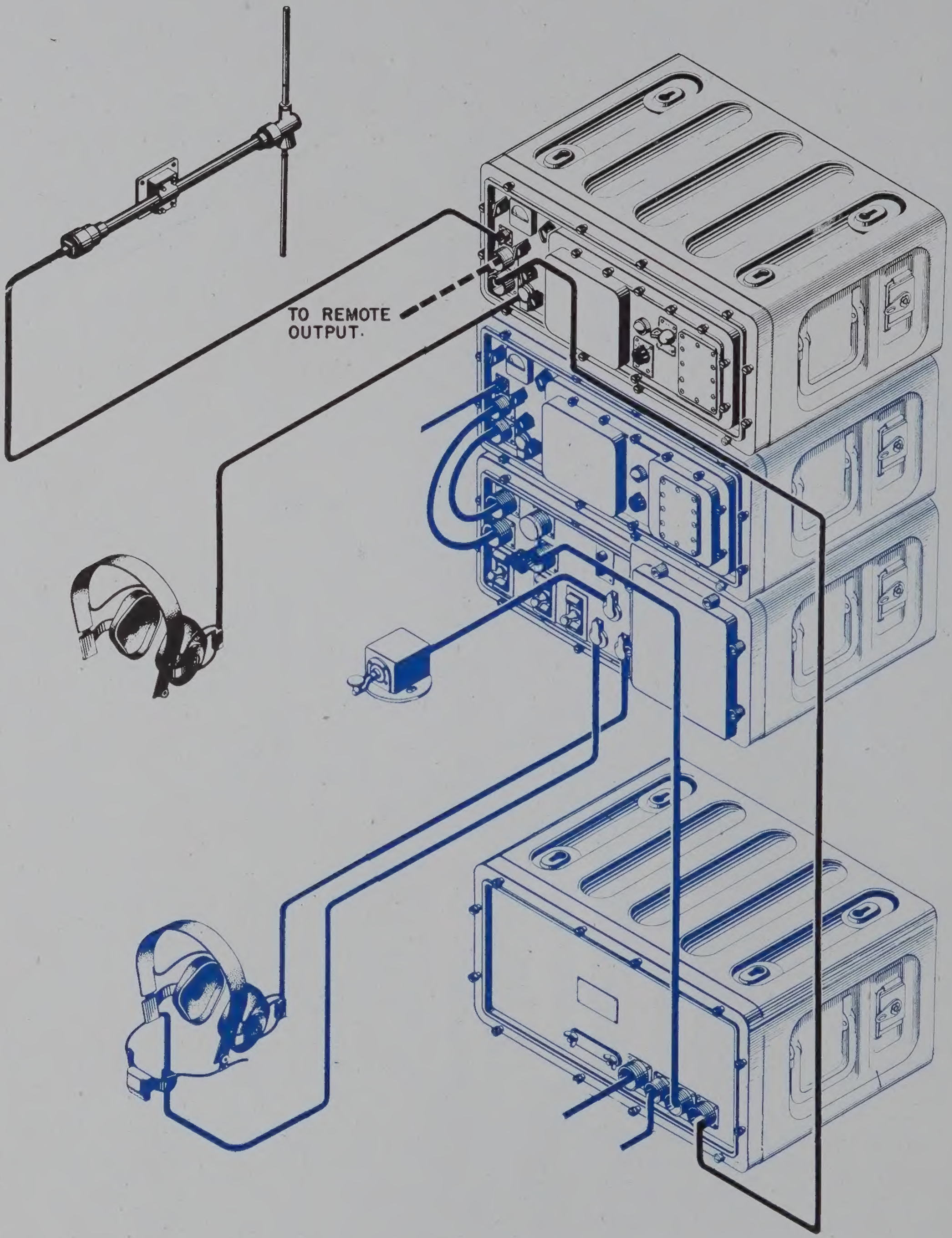
NAVY MODEL RDR RECEIVING EQUIPMENT

The RDR radio receiver was developed as a companion receiver for the MAR radio equipment. It is identical in appearance with the exception of an additional switch on the panel for switching the receiver off when not required.

The case of the RDR is the same corrugated metal enclosure as used with MAR, fitted with handles on the ends and keyhole slots on top and bottom of the case. Thus, the RDR may be mounted on a shockmount and combined with MAR equipment, in shipboard applications.

The case is fitted with a watertight cover held in place with heavy thumbnuts, a screwdriver and Allen wrench being clipped to the ends of the case, to be used for loosening or tightening the lid clamping screws.

The characteristics of the RDR are identical to those of the receiving section of the MAR, employing a similar circuit with its choice of ten crystal-controlled pre-set frequencies, any of which are available by simply rotating the selector switch to the frequency channel desired. The frequencies covered range from 225 to 390 megacycles. The motor-driven tuning mechanism control circuits are arranged to permit the connection of a remote selector switch so selection of channel frequency is possible from remote points.


TO REMOTE OUTPUT.

RDR SHIPBOARD APPLICATION

When used in conjunction with the MAR installations on shipboard, the RDR is powered from an outlet, provided for the purpose, on the panel of the Universal Power Supply unit. The unit then furnishes the 13 volt filament current required for the receiver and high voltage direct current for plate circuits of the tubes and selector motor operation.

The receiver may be powered direct from a 13 volt, direct current source. To obtain plate and selector motor voltages under this condition, use is made of the dynamotor in the receiver chassis. The power switch on the receiver starts the dynamotor when moved to the proper position in switching on the equipment.

The RDR receiver, when used on shipboard, is mounted on the framework supporting the MAR equipment by means of a shockmount not shown in the illustration opposite. The equipment components and operating accessories furnished are listed in the table below.

As will be seen, a cable is furnished to connect the RDR to the outlet on the universal power unit. This is the usual form of installation but where operation from 13 volt direct current is necessary, a second short cable is supplied to adapt a two wire battery cable to the 9 point input jack on the receiver.

The adaptor cable takes care of conditions when the receiver may be used in conjunction with field installations, where a gas engine generator is employed as the power source of the equipment.

The antenna accessories include a 10 foot coaxial transmission line, fitted with plugs and ready to install between antenna and receiver. For installations requiring longer transmission lines, a similar coaxial cable 50 feet long fitted with plugs is provided with the equipment accessories.

The two lengths of transmission line cable may be connected together by a connector, also furnished, to form a single transmission line.

COMPONENTS OF RDR RADIO EQUIPMENT

QUAN.	NAVY TYPE	NAME OF UNIT	LENGTH INCHES	DEPTH INCHES	HEIGHT INCHES	WEIGHT POUNDS
1	CRV-46283	Radio Receiver	21	16	9	45
1	CRV-66147	Antenna	25		22	3½
1		Gas Engine Generator	12	17¼	14¾	35

ACCESSORIES

QUAN.	ITEM	QUAN.	ITEM
3	Power input cable assemblies	2	Pilot lamps
2	Connectors for audio output cable	1	Each type tube used in receiver
1	Headset	1	50 foot antenna cable
1	Headset extension cord	1	Connector for antenna cable
10	Silica gel drier assemblies		**In Antenna Carrying Case**
4	Sets Dynamotor brushes	1	Vise assembly
4	Sets Selector motor brushes	1	Cable assembly
10	Fuses 30 ampere	1	Wrench
10	Fuses 1 ampere	2	Rubber plugs

RDR TUBE COMPLEMENT

SYMBOL	JAN TYPE	USE
V201	—9003	RF Amplifier
V202	—6AK5	First Detector
V203	—6J6	Third Tripler
V301	—12SG7	First Intermediate Amplifier
V302	—12SG7	Second Intermediate Amplifier
V303	—12SG7	Third Intermediate Amplifier
V304	—12SG7	Fourth Intermediate Amplifier
V305	—12H6	Second Detector and AVC
V401	—12H6	Noise Peak Limiter and Meter Rectifier
V402	—12SL7GT	First Audio and Silencer Amplifier
V403	—12A6	Audio Output
V502	—6C4	Second Tripler
V503	—6C4	First Tripler
V504	—6AG7	Crystal Oscillator and Doubler

QUICK REFERENCE DATA

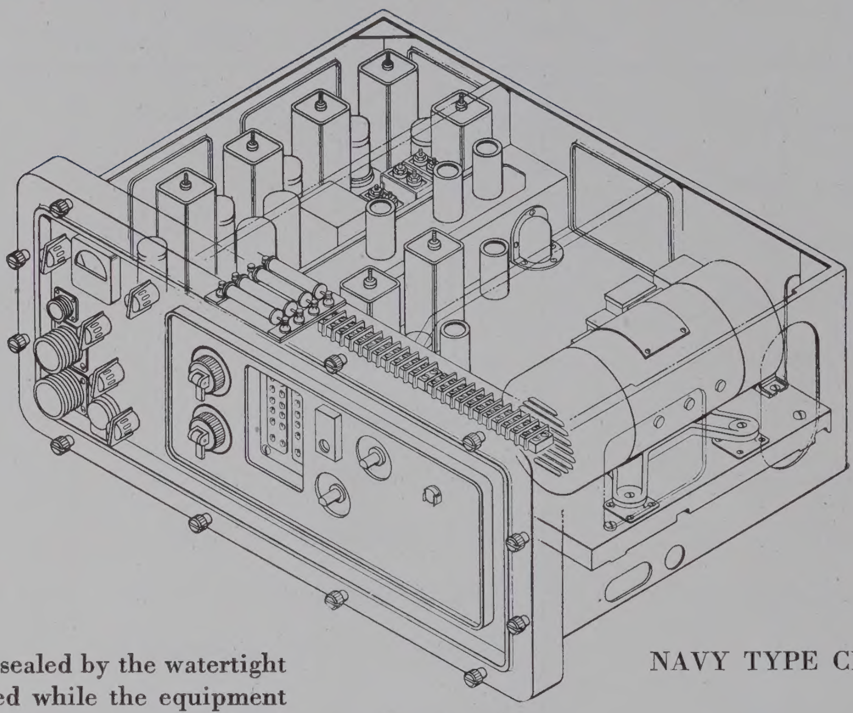
Equipment	RDR Radio Receiver
Contract	NXsr-60008
Contractor	RCA Victor Division of Radio Corporation of America
Naval Inspector	Resident Inspector of Navy Material, RCA, Front and Cooper Streets, Camden, N. J.
Packages in Complete Shipment	
Cubic Contents of Complete Shipment	Cu. ft.
Weight of Complete Shipment	Pounds

TECHNICAL SUMMARY

RDR RECEIVER—NAVY TYPE CRV-46283

Frequency Range	225-390 Megacycles
Frequency Stability	±0.007%
Tuning Bands	1
Pre-set Frequencies	10
Type of Circuit	Superheterodyne
Crystals	10, oven mounted
Sensitivity	10 microvolts
Selectivity	250 kc bandwidth at 6 db
Silencer Circuit	Operates on 6 db change
Input Voltage	13 V d-c or 13 V a-c and 375 V d-c
A-F Impedance	600 ohm output
A-F Output Frequencies	300-3000 cycles
Output Power	1 watt

DETAILS OF RECEIVER ASSEMBLY



NAVY TYPE CRV-46283

The receiver is completely sealed by the watertight cover that must be removed while the equipment is in operation. Tools are clipped to the ends of the cases, to loosen the thumbscrews holding the cover in place.

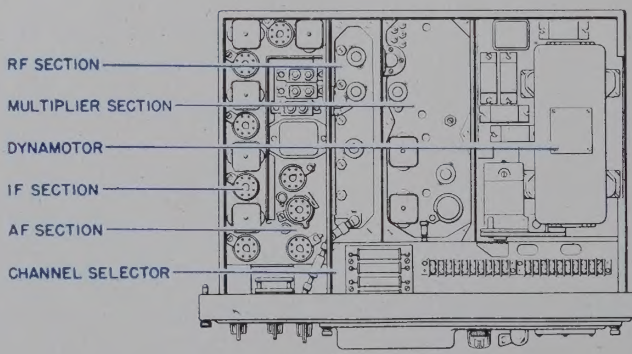
Removal of the cover exposes the controls of the receiver, grouped at the left of the panel. The panel mounts the Output control, Silencer level control and switch, Antenna compensator and the meter and its associated switch. Receptacles for connecting antenna, power and output cables, and a jack for the headset are mounted on the panel.

At the right of the receiver panel is another removable cover which remains in place for normal operation. This cover protects the crystal oven and automatic tuning selectors and mounts the panel light and knobs for the channel selector switch and power switch.

With the cover in place over the selector mechanism the equipment is splashproof and can be operated under any condition of the weather. Silica gel dryer units absorb any moisture that might seep into the receiver case.

THE CHASSIS

To facilitate repairs and replacement of the functional units that make up the receiver, the chassis is arranged with partitions that serve well as shielding between the various circuits. As will be seen in the illustration of the top of the chassis, the circuit elements are grouped in sections that form, in several cases, units that may be removed as a whole from the chassis for repairs, adjustment or replacement. The dynamotor for generating the plate current is mounted at the right, in the position occupied by the transmitter elements in the MAR assembly of receiver and transmitter.



RADIO FREQUENCY SECTION

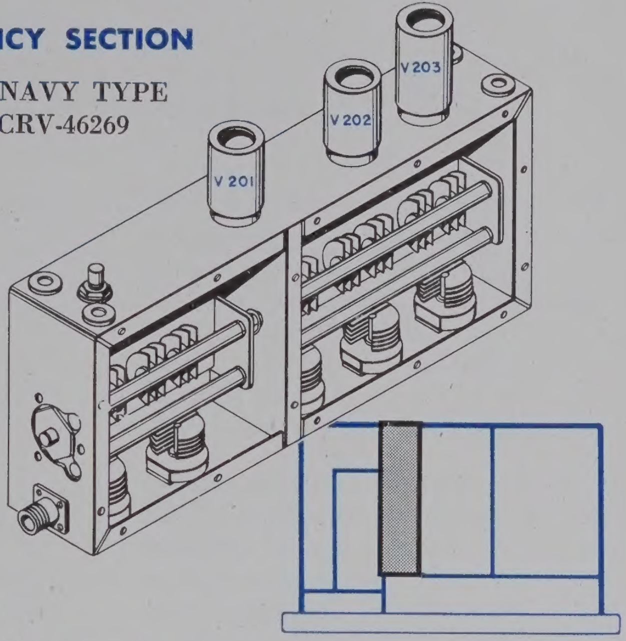
The radio frequency section of the receiver shown on this page consists of one radio frequency stage tuned to signal frequency, V201, the third tripler for the heterodyning frequency, V203, and the 1st detector or mixing tube, V202.

The above tubes are mounted on the top of the metal case that carries in its interior a gang of ten variable capacitors and associated tuning inductances. The capacitors are grouped in 5 pairs, each pair, with its associated inductance, forming the tuning element of one of the five resonant circuits involved.

The tuned antenna circuit is inductively coupled to the tuned input circuit of the radio frequency amplifier tube V201. The coupling is such as to provide maximum signal gain consistent with good selectivity. The output circuit of the RF amplifier stage is tuned and coupled inductively to the tuned input circuit of the first detector. This second tuned coupling arrangement acts to improve the signal to noise ratio and maintain selectivity against image and other spurious responses.

Another pair of variable capacitors is used to tune the plate circuit of the heterodyning frequency tripler, V203, the output of which is inductively coupled into the 1st detector, V202, to obtain the heterodyning action in the latter tube.

NAVY TYPE
CRV-46269

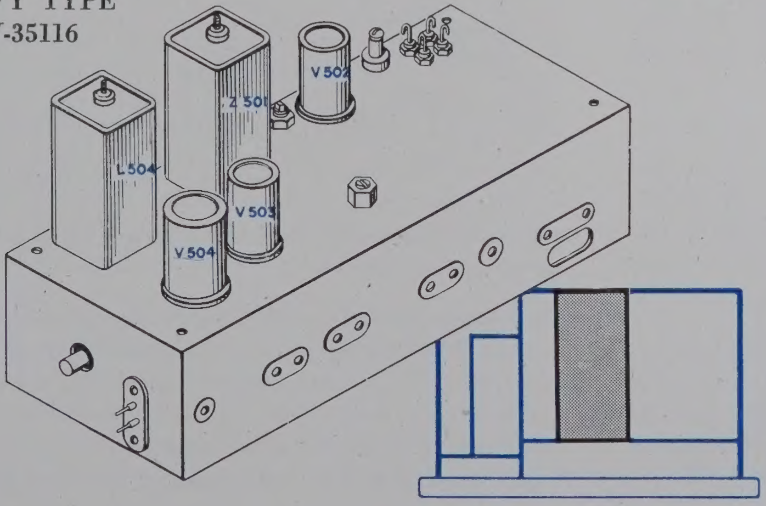


The ganged capacitors in the unit are driven through a shaft that extends from the end of the assembly and couples to the selector marked RF on the tuning panel. Proper alignment of the circuits is accomplished by means of trimming and padding capacitors adjustable from the top and bottom of the unit. A small antenna trimmer capacitor is also mounted in this unit and coupled to the knob on the control panel by means of a geared shaft assembly, as seen in the top view of the chassis.

FREQUENCY MULTIPLIER SECTION

The purpose of this section is to provide the proper heterodyning frequency for the receiver. A crystal in the crystal oven on the panel, selected by the selector switch in conjunction with the automatic tuning mechanism, is the control for the fundamental frequency of the oscillating circuit formed by a pair of grids of the tube V504. This frequency is doubled in the plate circuit V504 and tripled twice by tubes V503 and V502. The output current of V502 is fed into a third tripler located in the radio frequency section, thus providing the heterodyning frequency for the receiver.

NAVY TYPE
CRV-35116

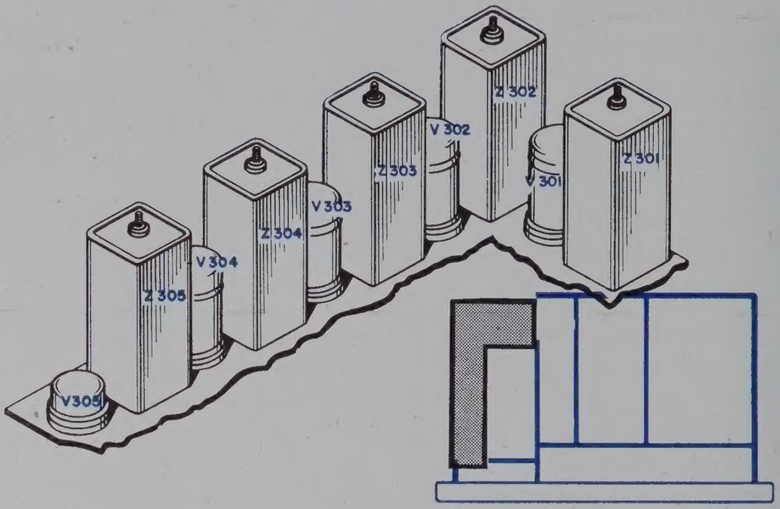


The two coupling transformers for the multiplying stages are shown on top of the chassis, adjustable cores being used in these units. The variable capacitors for tuning the frequency multiplying circuits are ganged and mounted inside the case of the unit. The capacitors are coupled to the multiplier selector on the panel by means of a shaft extending from the end of the casing.

INTERMEDIATE FREQUENCY AMPLIFIER SECTION

The inverted L section at the left of the chassis contains the transformers and tubes of the intermediate frequency amplifier and the second detector. Five fixed-tuned transformers, fitted with adjustable cores and fixed capacitors serve to couple the four stages of amplification and diode detector, V305.

From the output of the 1st detector in the RF section, the transformer T301 selects the 30.2 megacycle difference frequency for amplification. Four tubes, V301, V302, V303 and V304, coupled by the associated transformers, provide high amplification to feed the 2nd detector, V305. This latter tube is a double diode and provides AVC control as well as functioning as detector.

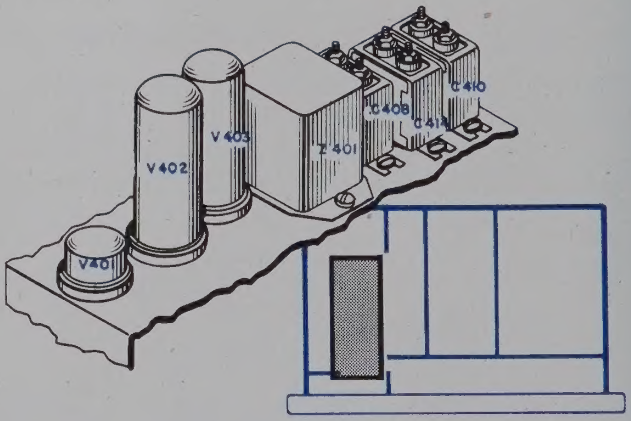


Necessary by-pass capacitors, biasing and filter resistors for the amplifier are mounted beneath the chassis, readily accessible from the bottom.

AUDIO FREQUENCY AMPLIFIER SECTION

The three tubes in the audio frequency section of the receiver function as noise peak eliminator, meter rectifier and silencer in addition to providing two stages of audio frequency amplification. The equipment is designed for headset reception so the audio gain need not be great or the output high, but 1 watt output is available for loudspeaker operation if desired. Filtering networks are included to cut off the higher audio frequencies to reduce hiss, while an output band pass filter holds the audio frequencies within the 300 to 3000 cycle frequency range.

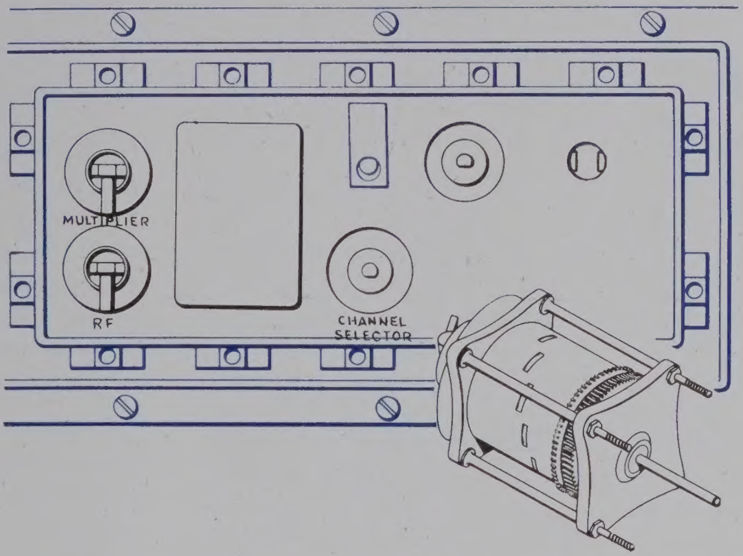
The first tube in this section, V401, is a double diode, one section being connected to act as a rectifier in conjunction with the panel meter circuit when readings are taken with a-c supply. The second section of the tube acts as a noise peak eliminator, cutting off signals during noise peaks.



The second tube, V402, is a double triode, one section acting as the "silencer" amplifier, the other as the first stage of audio amplification. The silencer section of the tube functions to control the bias on the grid of the amplifying section of the tube to render it inoperative and the receiver silent during no signal periods.

The final stage of audio amplification is obtained in tube V403, its output being coupled through the filtering network to the output circuit of the equipment. The output of the receiver is fed to the output receptacle on the panel and also connected to a phone jack located on the panel of the equipment.

AUTOMATIC CHANNEL SELECTOR



The automatic tuning or channel selector mechanism is a compact motor driven device occupying the space behind the panel at the right of the chassis. The illustration shows the appearance of the unit with front panel removed. An additional view is given of a selector unit, which shows the shaft extending at the rear for coupling to the driven tuning components of the receiver circuits.

The selectors can be set to a series of ten frequencies, as determined by the crystals provided, by a sequence of adjustments. This involves the setting of the channel selector switch on the first point, the tuning mechanism driving switches that connect a crystal from the bank of ten in the crystal oven into the oscillator circuit and positions the selectors for the first tuning sequence. The selector dials are then unlocked by raising the lever on the dials and the equipment tuned to the frequency selected, using the panel meter to determine resonance points. The dials are relocked by depressing the levers. A setting of the channel selector switch is made for another frequency and the process of unlocking, tuning and locking the dials repeated. In this manner it is possible to pre-tune the equipment for the ten frequencies within the 225 to 390 megacycle band, any of which being available for use by simply rotating the selector switch to the frequency desired.

The mechanism is driven by a small motor in the rear, visible in the top view of the chassis. The sequence of operation is as follows. When the Channel Selector switch is moved to change the frequency, a section of the switch operates a relay to close the motor circuit. The motor turns the selector drums and the crystal selecting switch to a new position by means of worm and spur gears.

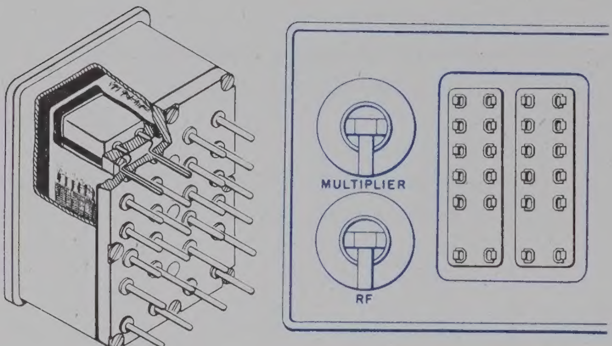
The rotating mechanism also drives a homing switch which acts to open the relay circuit when it reaches a point corresponding to the position of the selector switch. The opening of the relay circuit causes the relay armature to drop back and another set of contacts is closed that reverses the motor. The motor continues running in the reverse direction. When it has returned to its original position the limit switch, shown in the illustration, is actuated by the arm, opening the motor circuit and stopping the motor in position for another tuning excursion.

Terminals are provided on the bottom of the unit so an external selector switch may be connected to the equipment for remote selection of channel frequency.

The selectors operate as follows. In the forward direction the motor drives an outer drum, on each selector, that has ten slots. Each slot corresponds to one of the positions of the selector switch. Thus, the slot corresponding to the position selected will stop in the proper location. A pawl for the position selected will be cocked and when the motor reverses, the shaft to the tuned element carrying a bank of notched discs will also rotate, the drum remaining positioned, until the notch in the disc associated with the cocked pawl lines up with it. Then the pawl will drop into the notch and hold the shaft of the capacitor or other driven device at the desired position. As the motor drive continues in the reverse direction, a slipping clutch permits the selector disc and shaft to the tuned element to remain correctly positioned with the pawl latched into the proper disc. The motor operates until the mechanism strikes a limit switch and the motor stops. In this position the pawls will be locked in and the equipment tuned to the new frequency.

THE CRYSTAL OVEN

NAVY TYPE CFT-40148



The ten crystals controlling the basic frequency generated in the oscillator section of V504 are grouped and mounted in the compact unit shown in the illustration. The crystals are of the hermetically sealed miniature type CR-7E/U and the terminal pins of the individual crystal holders fit into jacks inside the unit that connect to pins on the rear of the unit. The cover may be removed from the unit for the replacement or installation of individual crystal holders.

The crystal oven has two built-in thermostatically-controlled heating units to maintain the crystals at a practically fixed temperature which prevents any shift in frequency that might occur with a change in crystal temperature.

Of the two heating units provided, one is a booster unit intended to bring the temperature of the oven to operating temperatures as rapidly as possible when the equipment is first switched on. When the proper temperature has been reached the booster heater cuts off and the second heating unit functions to take care of any further fluctuations of temperature.

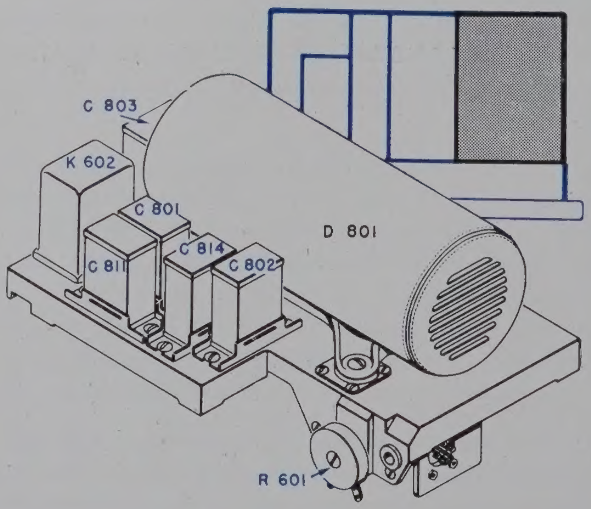
The crystal oven is fitted with twenty-four pins at the rear, twenty of the pins connecting to the ten pairs of crystal terminals while the other four pins are the heating unit terminals. The crystal oven plugs into a jack panel in the receiver selector unit, as shown in the illustration, to make the necessary connections to the switching mechanism behind the jack panel. The crystal switching mechanism is coupled to the tuning-motor gear-train and functions to connect the proper crystal into the circuit for any setting of the selector dials.

THE DYNAMOTOR

NAVY TYPE CAY-211483

The remaining section of the receiver chassis mounts the dynamotor, a device to provide the high voltage direct current for the tube plates and selector motor operation. This unit is essentially a motor-generator, in that it consists of a 13 volt, series wound motor at the input end that operates from the 13V, direct current power source. The output side is a 385 volt, direct current generator with a full load rating of 500 milliamperes.

Filter components, consisting of choke coils and capacitors, are provided to remove all commutator ripple from the generator end of the machine and suppress any brush noise generated in the motor that would cause interference in the receiver circuits.



The dynamotor is used only with a 13V, direct current power supply. The power switch on the panel of the receiver is arranged to switch the dynamotor on when moved to the Dyn. position and close the high voltage output circuit of the ma-

chine. When the RDR receiver is used with the MAR equipment and is operated from the universal power unit, the dynamotor is not required. The power switch is then placed on the PU position, when the receiver is placed in operation, and all power for operation is obtained from the power supply unit, both 13V a-c for the heater circuit and 375V d-c for tube plates.

The dynamotor is housed in a crackle finished black case with ventilating louvers in the ends. The frame supporting the dynamotor is carried by four rubber shockmounts that absorb any vibration that may develop in the machine and affect the operation or life of the receiver parts or tubes.

Leads from the dynamotor are connected to a terminal block under the chassis, where connections are made to the filter capacitors which are visible on top of the chassis, grouped around the dynamotor.

The unit is cooled by an inbuilt fan that circulates air through the housing and in so doing puts all the air inside the airtight receiver case into motion. This results in a general overall cooling effect in that maximum radiation is obtained from the metal enclosure of the receiver.

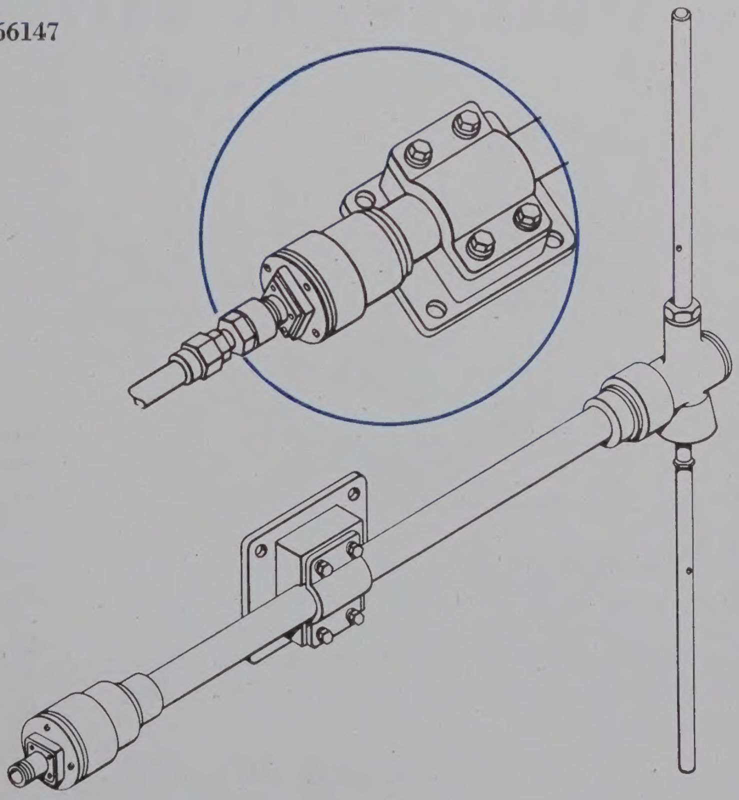
The motor end of the dynamotor is protected by a 30A cartridge fuse; the generator is protected from overload due to short circuits by a 1A cartridge fuse. The latter fuse remains in the circuit when operating from the power unit.

ANTENNA

NAVY TYPE CRV-66147

The antenna is of the halfwave, center-fed dipole type and is furnished disassembled in a carrying case with necessary brackets, accessories and wrench for assembly and installation. The two radiating rods extend at right angles from the end of the tubular mounting member and are screwed into threaded studs for assembly. One rod is grounded to the supporting tube and outer conductor of the coaxial transmission line. The "live" rod is supported by an insulated stud connected to the center lead of the antenna.

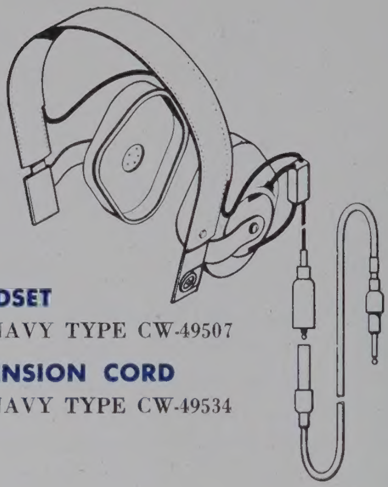
The antenna is designed to have an impedance of approximately 50 ohms with characteristics that result in good matching with the transmission line over the full frequency range of 225 to 390 megacycles used in the equipment. No alterations or adjustments of the antenna are necessary when frequency changes are made.



HEADSET AND EXTENSION CORD

The only operating accessory required with the receiver is the headset, which, due to its short connection cord, requires an extension cord to give freedom to the operator.

The headset band is leather covered, adjustable as to length over the head, with the earpieces offset from the headband itself. The unit is splashproof and is fitted with snap fasteners so a lip microphone may be clipped into place should it be required.



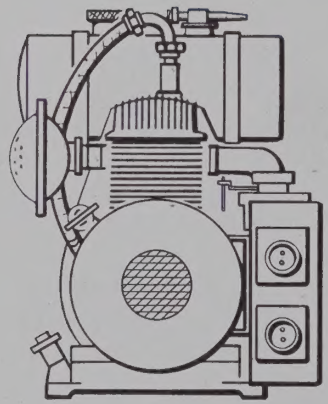
HEADSET
NAVY TYPE CW-49507
EXTENSION CORD
NAVY TYPE CW-49534

REMOTE OUTPUT

A receptacle is provided on the panel at the lower left to permit connecting the output of the receiver to some remote point and provide remote control of the silencer circuit. This connection requires a three conductor cable, which is not furnished with the equipment. A plug is furnished as an accessory to be attached to the cable and plugged into the receptacle marked REM on the panel.

GAS ENGINE DRIVEN GENERATOR

NAVY TYPE



A self contained generating unit consisting of a four cycle gas engine directly connected to a direct current generator is used as a source of power when the RDR equipment is used in the field or other isolated position where other sources of power are not available.

The power unit fits into a light weight metal carrying case having corrugated sides and a gasketed end cover held in place by eight thumbscrews. The entire assembly forms a lightweight, portable power plant, rugged enough to stand the hard usage given portable equipment in the field or in Naval service. The unit in its case is completely waterproof and buoyant in fresh water. With the unit removed from its case for operation it is completely splashproof and capable of operation out of doors in any kind of weather for extended periods of time.

As shown in the illustration, the engine is a single cylinder, 4 cycle, air cooled unit, capable of delivering 0.9 HP under continuous duty. It is complete with fuel tank of sufficient capacity to operate the engine for two hours and employs high tension magneto ignition. A switch for cutting off the ignition is mounted on the flywheel housing.

Intended for operation under all conditions of dust, dirt, shock, humidity and extremes of temperature, it is fitted with a readily serviced air intake filter of the dry type and shielded ignition leads and plug. Provisions are also made to allow the unit to be transported in a tilted or inverted position without danger of the fuel or oil leaking or spilling.

The generator with a nominal rating of 30 amperes at 13.7 volts has an output of 13.3 volts direct current under a continuous load of 300 watts with sufficient overload capacity to carry a maximum load of 400 watts for several hours, in case of emergency, without damage.

Both mechanical and electrical regulators are provided to control the output of the unit. The gas engine is fitted with a mechanical governor to maintain a constant engine speed of 4200 R. P. M. Since the unit may be used not only as a source of current for the operation of portable radio equipment but for battery charging as well, two types of regulation on the output of the generator are provided.

A control box alongside the generator contains the reverse current relay, filter elements and regulator elements. A toggle switch on the box is arranged to select the type of regulation desired and its two positions are marked "Radio" and "Battery Charge Only." The control box likewise mounts the two output connectors for the connection of cables to the radio equipment and to storage batteries, if the latter are employed with the engine driven unit.

The filter elements and shielding of the ignition prevent commutator ripple and radio frequency interference with the radio equipment. The storage batteries, when available, aid the filtering action by floating on the line and act as stand-by for short operating periods.

The power unit is packed in a heavy luggage type carrying case which contains all accessories, operating spares and servicing tools.

NAVSHIPS 900,841

THEORY OF OPERATION

SECTION 2

NAVY MODEL

RDR

RADIO RECEIVING EQUIPMENT

RESTRICTED

TABLE OF CONTENTS

THEORY OF OPERATION

SECTION 2

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Audio Frequency Section 2-10

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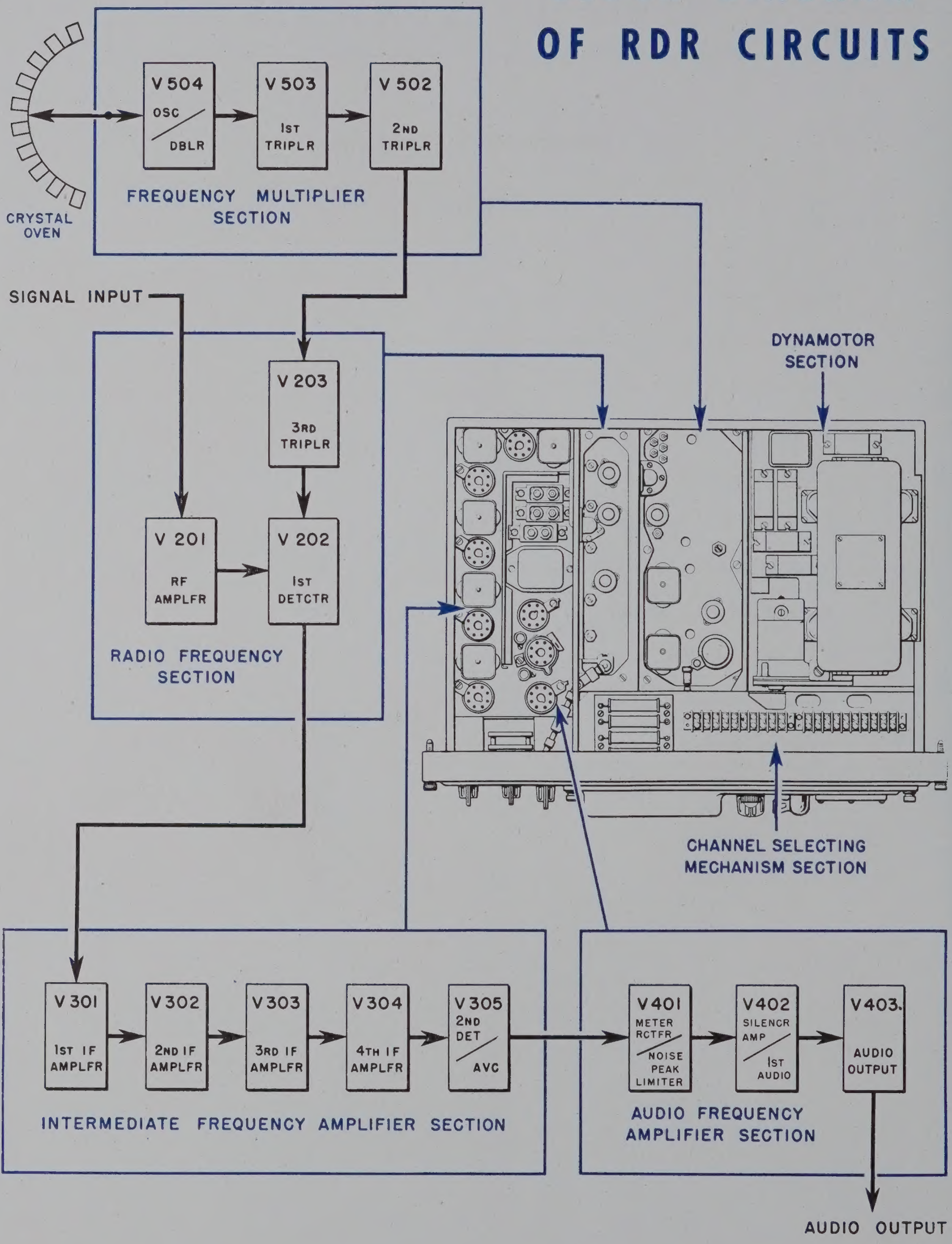
BLOCK DIAGRAM OF RDR CIRCUITS


V 504
OSC / DBLR
V 503
1ST TRIPLR
V 502
2ND TRIPLR
FREQUENCY MULTIPLIER SECTION
CRYSTAL OVEN
SIGNAL INPUT
V 203
3RD TRIPLR
V 201
RF AMPLFR
V 202
1ST DETCTR
RADIO FREQUENCY SECTION
DYNAMOTOR SECTION
CHANNEL SELECTING MECHANISM SECTION
V 301
1ST IF AMPLFR
V 302
2ND IF AMPLFR
V 303
3RD IF AMPLFR
V 304
4TH IF AMPLFR
V 305
2ND DET / AVC
INTERMEDIATE FREQUENCY AMPLIFIER SECTION
V 401
METER RCTFR / NOISE PEAK LIMITER
V 402
SILENCR AMP / 1ST AUDIO
V 403
AUDIO OUTPUT
AUDIO FREQUENCY AMPLIFIER SECTION
AUDIO OUTPUT

ANALYSIS OF RECEIVER CIRCUITS

The RDR receiver is of the superheterodyne type as employed in the MAR equipment and in general follows the arrangement of components usually employed in circuits of this type. Certain modifications have been made to assure stable operation under extremes of operating conditions, and at the high frequencies involved in the radio-frequency sections of the equipment. This applies equally to the channel frequency input, the heterodyning frequency generation, and to the intermediate-frequency amplifiers.

To reduce heterodyning frequency drift to a minimum, a crystal-controlled, frequency multiplier is utilized. The crystal controlling the first oscillator frequency is further maintained at a practically-constant temperature by a crystal oven to assure frequency stability under all conditions of operation. This precaution is necessary because the fundamental crystal frequency must be doubled once and tripled three times to derive the heterodyning frequency required by the receiver, which operates on a 30.2 megacycle intermediate frequency.

The receiver circuits include, in addition to automatic volume control, a noise-peak limiter for blocking high-intensity periodical interference often encountered. A silencer circuit is also provided to render the receiver silent during no-signal periods, a desirable feature for headset reception in the high-frequency bands.

Tuning of the receiver is accomplished by means of a motor-driven mechanism that allows of rapid choice of any one of the ten channel frequencies to which the equipment can be set. This arrangement, in connection with the other features of AVC, noise peak suppression, and silencer circuit, results in a receiver particularly suited to remote operation and to a wide range of operating conditions.

On the opposite page is given a block diagram of the receiver circuit in conjunction with a view of the chassis that illustrates the relationship of the circuits involved as well as the location of the sections in the chassis. The circuits have been grouped into functional units for ease of alignment and repair. The entire circuit breaks down into four definite sections that will be discussed in detail.

As will be seen in the block diagram, there is one stage of channel frequency amplification before the first detector tube in the radio-frequency section of the receiver.

The heterodyning frequency for mixing in the detector tube originates in the frequency-multiplier section and involves a crystal-controlled oscillator stage, a doubler, and two tripler stages in this section. This frequency must be tripled again in the R-F section before it is fed to the first detector.

The output of the first detector then passes to the intermediate-frequency amplifier section which consists of four stages of amplification and a diode second detector. This detector tube is of the double-diode type and one section provides the AVC for maintaining a flat-gain characteristic in the amplifier.

The audio-frequency amplifier section contains three tubes that perform five functions as indicated. Here are located the noise suppressor and silencer circuits in addition to the two stages of audio amplification. A section of one of the tubes is utilized as a rectifier for the panel meter to permit readings to be taken on AC supply voltages.

The dynamotor section of the chassis contains the source of high-voltage direct current for the operation of the equipment when operating on a 13 volt, direct-current source. The dynamotor generates the 375V direct current for the tube plate circuits and the selector motor. Filter circuits and control relays are also located in this section.

The channel-selecting mechanism occupies the front section of the chassis and includes the crystal oven and switches that control the tuning operation.

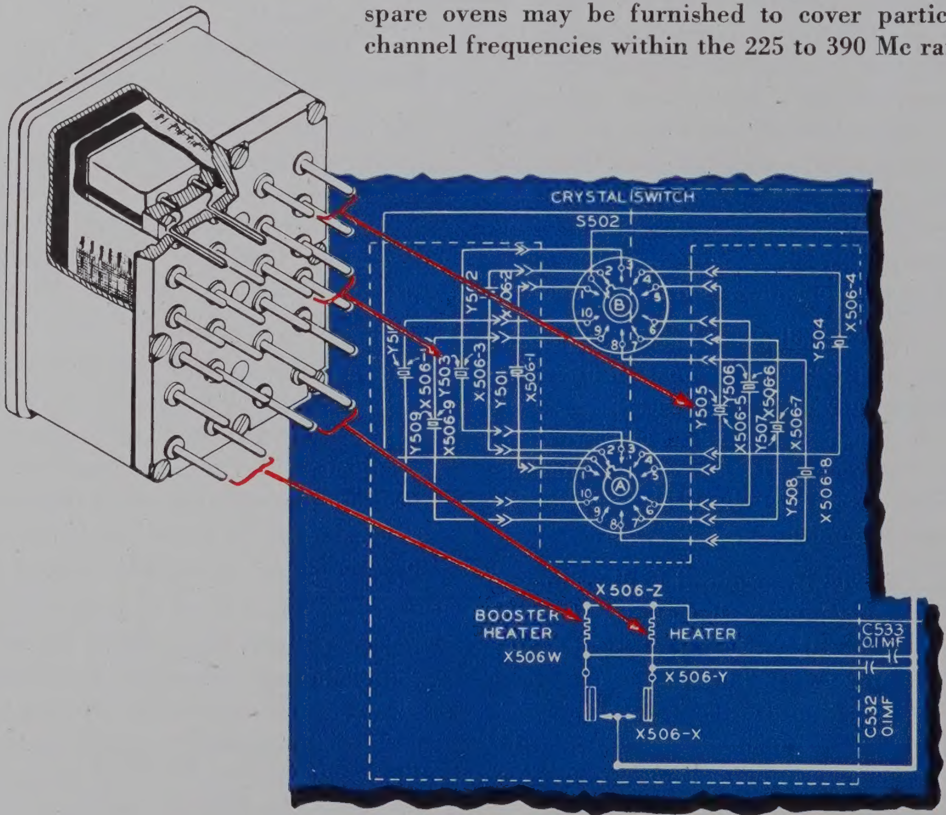
FREQUENCY DETERMINATION

The illustration below shows the details of the switching circuit employed to bring the proper crystal into the oscillator circuit for any given setting of the channel-selector switch. A cutaway view of the crystal oven shows the connection of the crystal holders to the pins protruding from the base of the crystal oven.

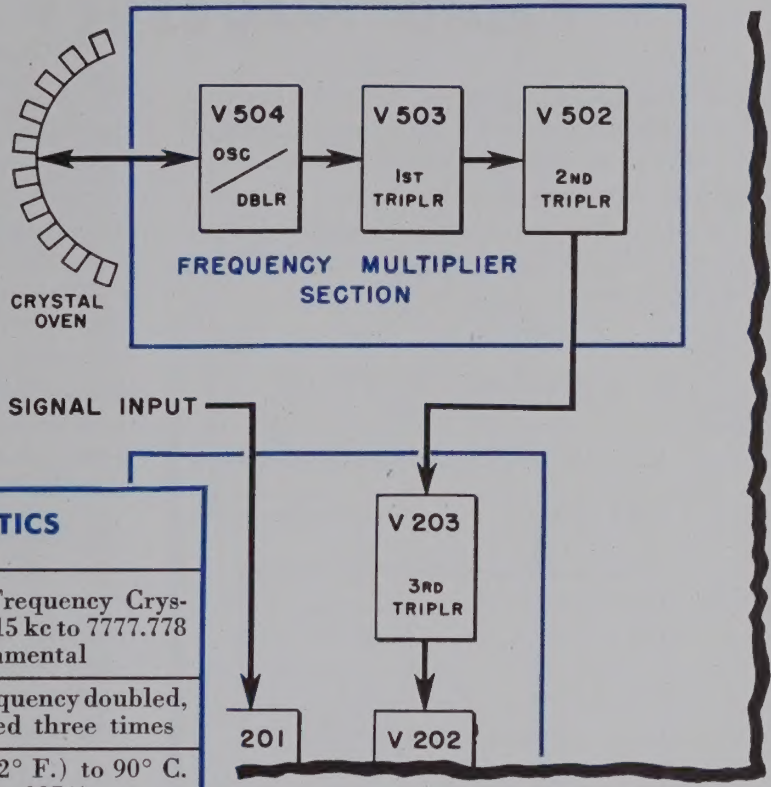
Ten pairs of the pins are used to make connection to the ten crystals in the oven. The other four pins serve as terminals for the two heating elements attached to the metal enclosure surrounding the crystal group. The temperature of the oven is controlled by two thermostats in the oven. The space between the metal case over the crystals and the outer case of the oven forms a dead air space to prevent rapid loss of heat from the oven.

The twin-wafer switches S502A and B are mounted behind the jack plate in the receiver selector panel into which the oven is plugged. These switches are driven by the tuning mechanism. The switch blades are rotated by the mechanism when a channel frequency change is being made. Thus, when a tuning cycle is completed, the switches will have brought into the circuit the correct crystal for the selected channel frequency.

The oven can be completely dismantled by removing screws in the base for removal of crystals and individual replacement, if necessary. Usually the complete oven is replaced; and spare ovens may be furnished to cover particular selected channel frequencies within the 225 to 390 Mc range.


CRYSTAL SWITCH
S502
B
A
1
2
3
4
5
6
7
8
9
10
Y512
X506-2
Y511
X506-10
Y503
X506-3
Y501
X506-1
Y509
X506-9
Y504
X506-4
Y505
Y506
X506-5
X506-6
Y507
X506-7
Y508
X506-8
X506-Z
BOOSTER HEATER
X506W
HEATER
X506-Y
X506-X
C533 0.1MF
C532 0.1MF

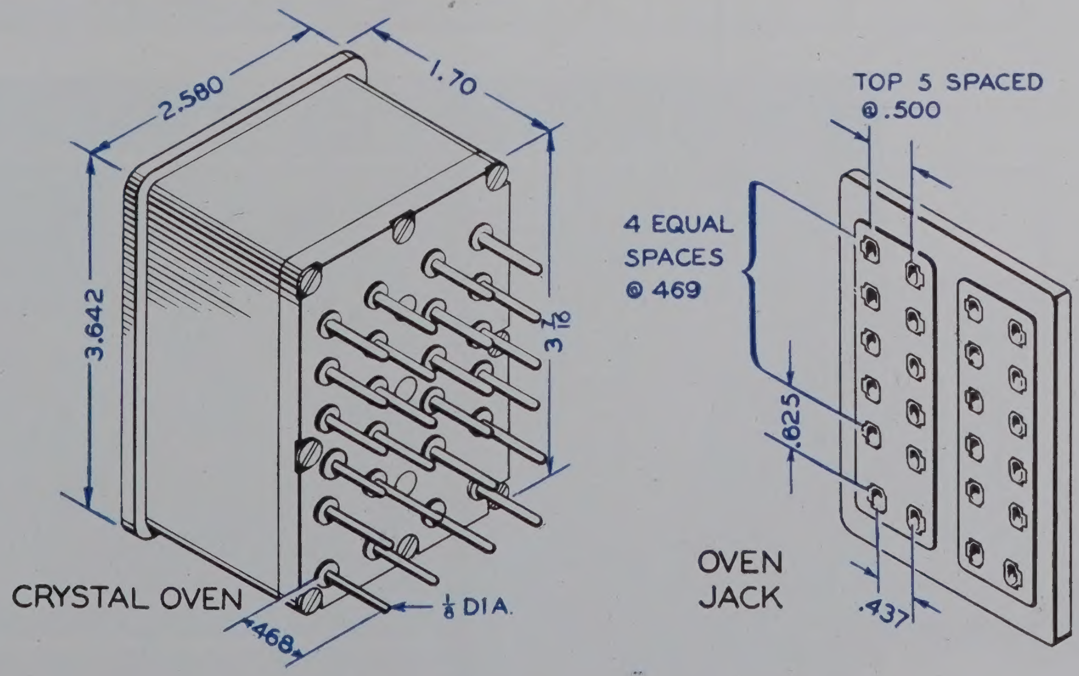
RDR CRYSTAL DATA


CRYSTAL OVEN
V 504
OSC
DBLR
V 503
1ST
TRIPLR
V 502
2ND
TRIPLR
FREQUENCY MULTIPLIER SECTION
SIGNAL INPUT
V 203
3RD
TRIPLR
201
V 202

CRYSTAL CHARACTERISTICS

Frequency Range of Crystal Circuit	Channel Frequency Crystals 4814.815 kc to 7777.778 kc—Fundamental
Heterodyning Frequency in Receiver	Crystal frequency doubled, then tripled three times
Temp. Coefficient of Crystal	50° C. (122° F.) to 90° C. (194° F.)—.007%
Temp. of Calibration	75° C. (167° F.)
Temp. of Operation (Oven)	75° C. (167° F.) ± 3°
Frequency Stability	.004%
Type of Oscillator Tube	Channel Frequency 6AG7
Method of Holding Crystal	Plated Crystals, cemented to coil springs and sealed

CRYSTAL OVEN AND JACK DIMENSIONS


2.580
1.70
3.642
3 7/16
CRYSTAL OVEN
1/8 DIA.
.468
TOP 5 SPACED @ .500
4 EQUAL SPACES @ 469
.825
OVEN JACK
.437

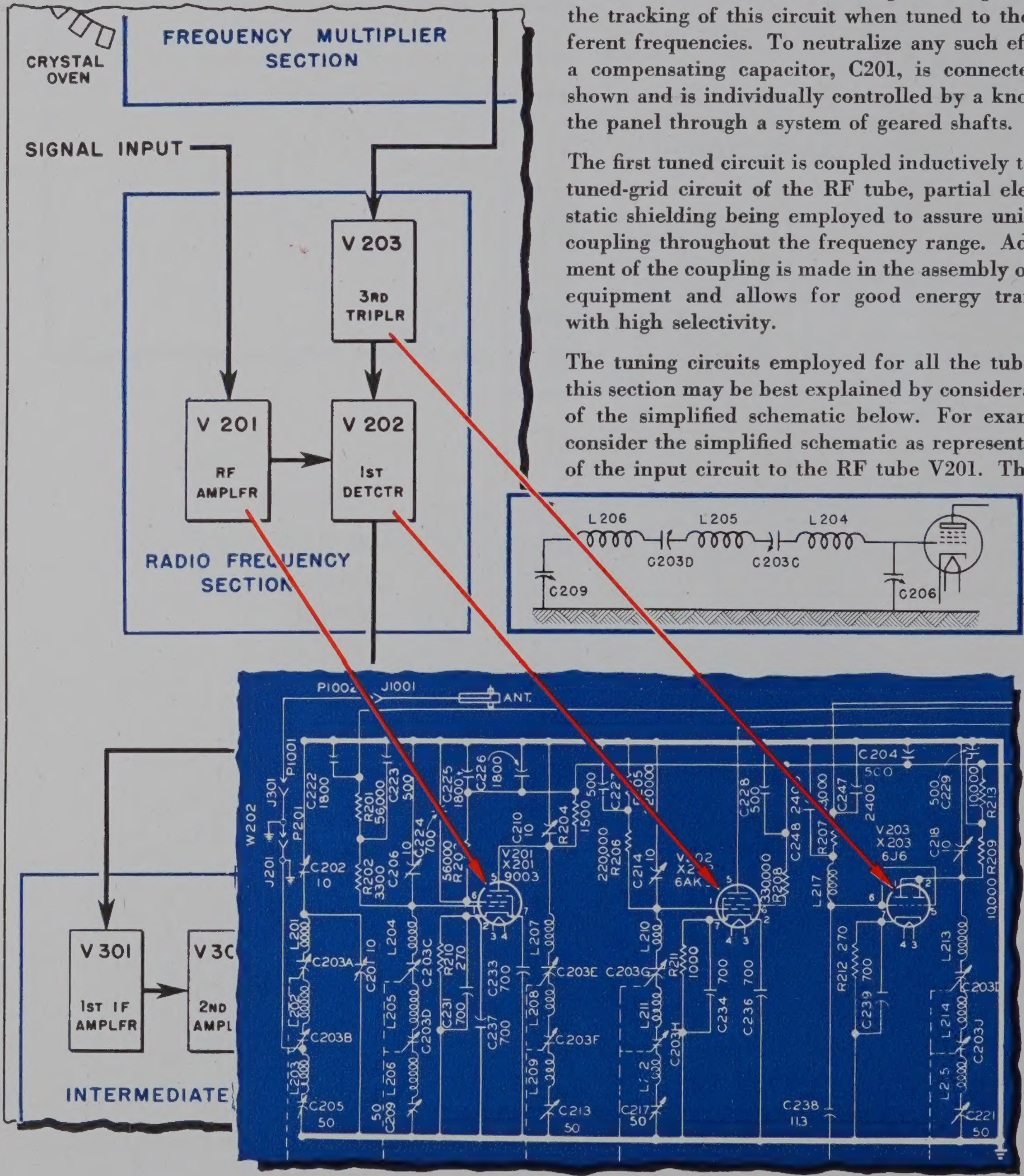
RADIO FREQUENCY SECTION

The radio frequency tuning section of the receiver employs five resonant circuits, simultaneously tuned by the RF dial on the selector panel. Four of the circuits are utilized to tune the channel frequency being received, the fifth resonating the output of the heterodyning frequency tripler tube V203 included in this unit.

As shown in the illustration of a portion of the schematic and a simplified schematic, the tuned circuits consist of three inductances in series, with variable capacitors between the sections. Two tuned circuits precede the RF amplifier tube, V201. The input from the antenna is tapped into inductance L203 to provide sufficient input into the first tuned circuit without excessive loading that might affect the tracking of this circuit when tuned to the different frequencies. To neutralize any such effects, a compensating capacitor, C201, is connected as shown and is individually controlled by a knob on the panel through a system of geared shafts.

The first tuned circuit is coupled inductively to the tuned-grid circuit of the RF tube, partial electrostatic shielding being employed to assure uniform coupling throughout the frequency range. Adjustment of the coupling is made in the assembly of the equipment and allows for good energy transfer with high selectivity.

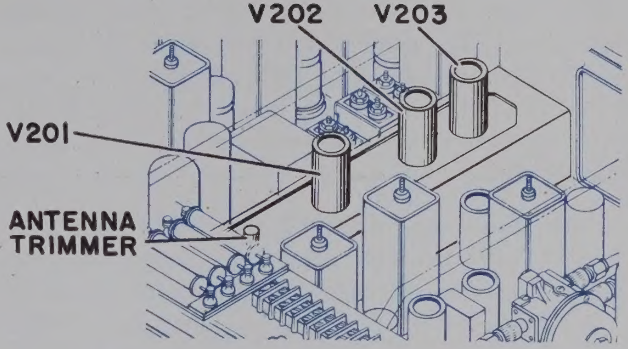
The tuning circuits employed for all the tubes in this section may be best explained by consideration of the simplified schematic below. For example, consider the simplified schematic as representative of the input circuit to the RF tube V201. The in-


CRYSTAL OVEN
FREQUENCY MULTIPLIER SECTION
SIGNAL INPUT
V 203
3RD TRIPLR
V 201
RF AMPLFR
V 202
1ST DETCTR
RADIO FREQUENCY SECTION
V 301
1ST IF AMPLFR
V 30
2ND AMPL
INTERMEDIATE
L 206
L 205
L 204
C203D
C203C
C209
C206
P1002
J1001
ANT.
V201 X201 9003
V202 X2 6AK
V203 X203 6J6
C202 10
C203A
C203B
C205 50
C209 50
C203E
C203F
C203G
C203H
C213 50
C217 50
C204 500
C238 113
C221 50

ductance L204 is of such a value that when the capacitors C203C and C203D are at minimum setting, a resonant half-wave line is formed, with respect to the ground, for the frequencies at the high end of the tuning band. The inductance L205 and L206 have electrical lengths of less than one-half and one-quarter wavelength, respectively, in order to avoid resonance in the tuning band.

As the capacitors C203C and C203D are increased in value, the additional inductances L205 and L206 are gradually introduced into the line. This has the effect of electrically lengthening the line and making it resonant to lower frequencies. Alignment between the tuned circuits is obtained by adjustment of trimming capacitor C206 in the circuit shown, which is connected to L204 at the point of current maximum for the high-frequency end of the band. An additional padder, C209 for the circuit under discussion, is provided for alignment at the point between the middle and the high end of the band.

The output or plate circuit of the RF amplifier is tuned and also coupled inductively to the tuned input circuit of the first detector tube V202.


V202
V203
V201
ANTENNA TRIMMER

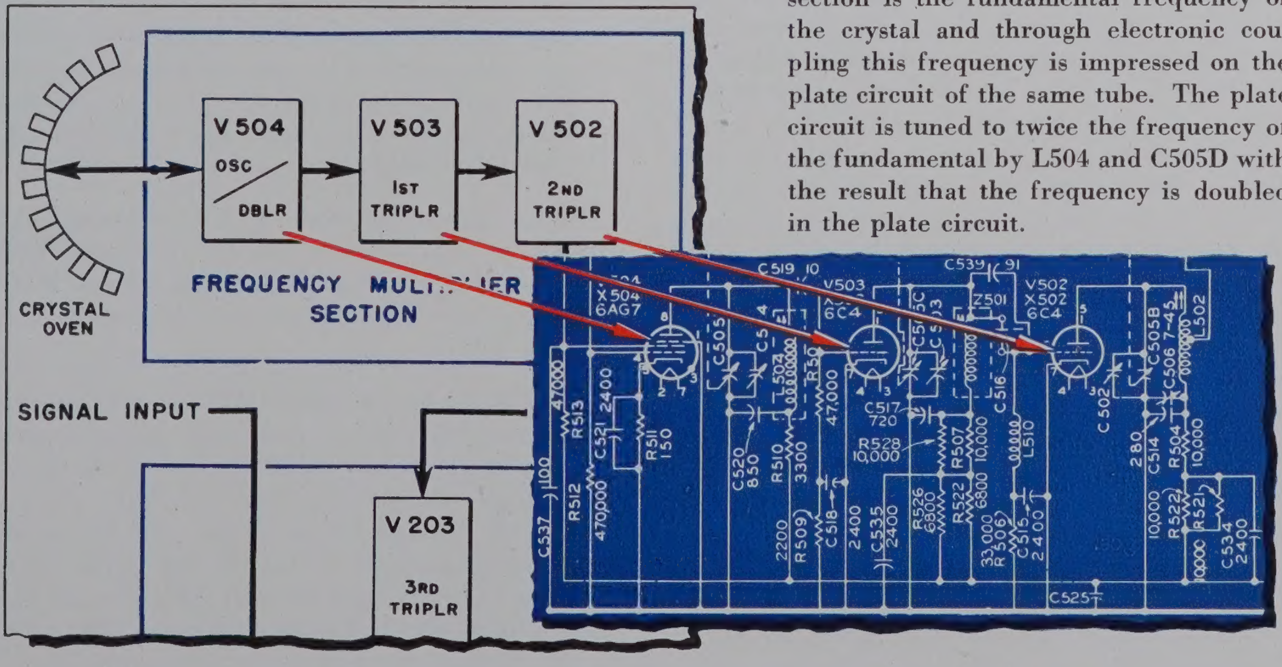
The output of the second tripler in the frequency-multiplier section is fed to the tripler tube V203 in the RF section. An inductance L217, connected to the grid of the V202 tube, and the coupling capacitor C238 form a filter that assures uniform coupling to the tripler at all frequencies.

The plate circuit of this heterodyning tripler tube is resonated in the same manner as that employed with the RF tuning circuits and is inductively coupled into the grid circuit of the first detector. A heterodyning action is thus obtained that results in an intermediate frequency of 30.2 megacycles for amplification in the intermediate amplifier.

FREQUENCY MULTIPLIER SECTION

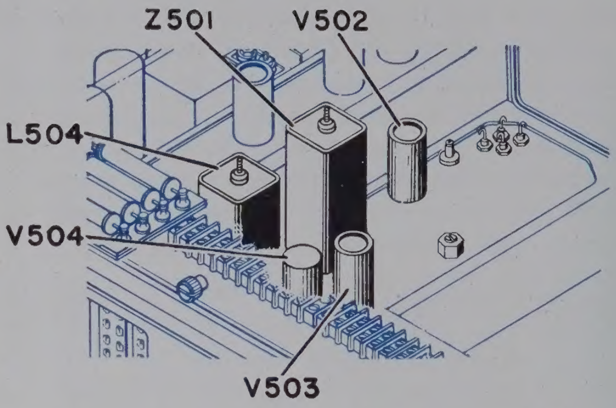
The function of the frequency multiplier, as its name implies, is to develop the necessary heterodyning frequency from the fundamental frequency of the crystals employed with the equipment. Referring to the illustration, the crystal selected by the switching mechanism in any tuning sequence is connected to the grid and screen of the oscillator tube V504 to form a Pierce oscillator.

The frequency generated in the oscillator section is the fundamental frequency of the crystal and through electronic coupling this frequency is impressed on the plate circuit of the same tube. The plate circuit is tuned to twice the frequency of the fundamental by L504 and C505D with the result that the frequency is doubled in the plate circuit.


V 504
OSC
DBLR
V 503
1ST TRIPLR
V 502
2ND TRIPLR
CRYSTAL OVEN
FREQUENCY MULTIPLIER SECTION
SIGNAL INPUT
V 203
3RD TRIPLR
X 504
6AG7
C519 10
V503
6C4
C539 91
Z501
V502
X502
6C4
L502
C505
C505B
C506 7-45
R513 47,000
C521 2400
R511 150
C537 100
R512 470,000
C520 850
R510 3300
R509 2200
L504
47,000
C518 2400
C517 720
R528 10,000
C535 2400
R526 6800
R522 6800
R507 10,000
R506 33,000
C516
L510
C515 2400
C502
C514 280
R504 10,000
R522 10,000
R521
C534 2400
C525

The output of V504 is coupled by means of the capacitor C519 to the grid of tube V503. This tube has its plate resonated by Z501 and C505C to three times the input frequency, hence a tripling action takes place to give an output frequency three times that of the input.

In turn, the output of V503 is coupled to the second tripler V502 through capacitor C516 where the tripling action is repeated by the plate circuit of V502 being properly tuned by L502 and C505B. The plate and grid circuits of both triplers are filtered by resistors and capacitors, as shown, to prevent intercoupling or feedback and self-oscillation. A tap is taken on the inductance L502 in the plate circuit of V502 and the output coupled through capacitor C238 to the tripler tube in the RF section, to provide the heterodyning frequency for the receiver.



The four tuned circuits in the frequency multiplier are simultaneously tuned by the Multiplier selector dial on the panel. The circuits are aligned to assure proper tracking at all frequencies by adjustable cores in the shielded tuning inductances and trimming capacitors across the variable capacitors.

INTERMEDIATE FREQUENCY SECTION

The intermediate frequency amplifier consists of four stages of amplification employing fixed tuned transformers Z301, Z302, Z303 and Z304 as coupling between the associated tubes V301, V302, V303 and V304. The transformers are wound with their coupling a little greater than critical, to broaden the top of the resonance curve, and are partially tuned by fixed capacitors connected across the windings, with final alignment being made possible by adjustable cores.

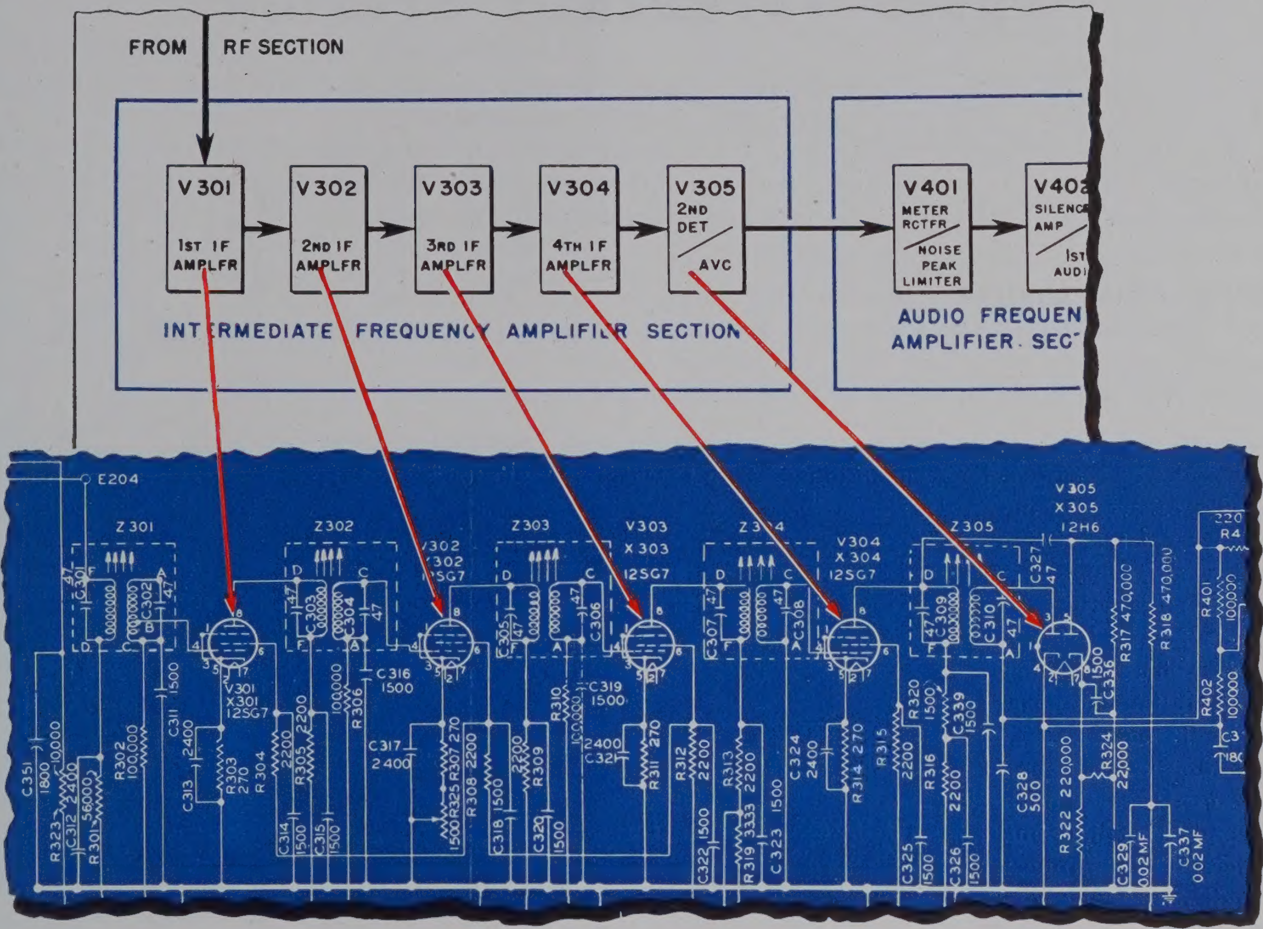
The plate output of the 1st detector is connected directly to the primary of the first intermediate transformer Z301, the secondary being tapped for the input to the first intermediate amplifier tube V301 to obtain better overall stability of the amplifier. The three following stages are identical, particular care having been taken to stabilize the circuits by the use of resistance-capacity filters in the current supply circuits and the use of chokes in the filament circuits. The screen grid potentials of the first three tubes V301, V302, V303 are drawn through resistors in series, with by-pass condensers at points of connection. This method of filtering avoids overall feedback. A variable resistor shown at R325 in the cathode return of the second tube permits the adjustment of the overall response of the intermediate frequency amplifier to the AVC biasing voltages.

The last tube V305 in the section is a double diode. One section is utilized as the second detector; the other section provides automatic volume control. The detector section is connected to the secondary of the last intermediate-frequency transformer Z305, the rectified audio-frequency potentials appearing across the plate-load resistors R401 and R402. The audio-frequency potentials across R401 are then fed to the noise-peak limiting tube V401 in the audio frequency amplifier section and thence to the audio amplifiers.

The right-hand section of V305 is the automatic volume control rectifier that furnishes the bias control voltage for the grids of the tubes to control the gain of the intermediate and radio frequency amplifier stages. Signal input to the AVC section is through capacitor C327 from the plate circuit of the last intermediate frequency amplifier tube.

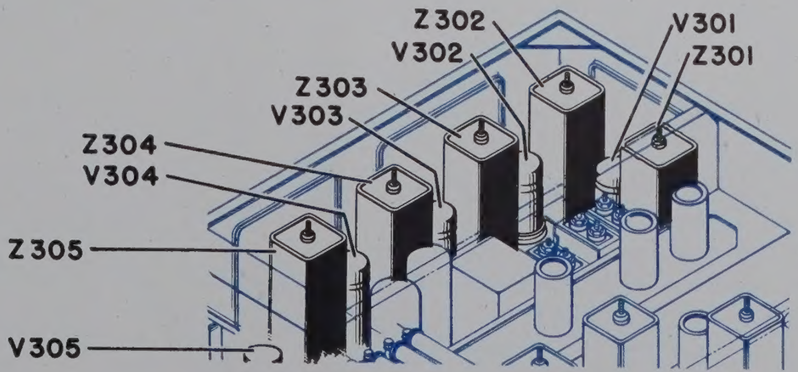
A delay in the action of the AVC circuit is obtained by biasing the cathode of the AVC section of V305 positive by the voltage drop across resistor R324, which is connected in series with the rectifier load resistor R317.

The positive bias is sufficiently great to prevent conduction through the rectifier at signal intensities up to approximately 75 percent of the maximum power capabilities of the amplifier. Beyond this point, the signal input to the AVC section becomes great enough to override the positive bias and the tube conducts current. This current flow results in a potential appearing across R317. The


FROM RF SECTION
V301
1ST IF AMPLFR
V302
2ND IF AMPLFR
V303
3RD IF AMPLFR
V304
4TH IF AMPLFR
V305
2ND DET
AVC
INTERMEDIATE FREQUENCY AMPLIFIER SECTION
V401
METER RCTFR
NOISE PEAK LIMITER
V402
SILENCE AMP
1ST AUDI
AUDIO FREQUEN
AMPLIFIER SEC
E204
Z301
Z302
Z303
Z304
Z305
V301 X301 12SG7
V302 X302 12SG7
V303 X303 12SG7
V304 X304 12SG7
V305 X305 12H6
R317 470,000
R318 470,000
R401 100,000
R402 100,000
C329 0.02 MF
C337 0.02 MF

negative end of the load resistor R317 is connected through R318 to increase the bias voltage applied to the grids of the RF amplifier tube V201 and the first three stages of the intermediate frequency amplifier to reduce their gain.

The circuit values are so proportioned that further increases in signal intensity result in increasingly greater biasing voltage being applied to the grids of the controlled tubes so that the gain falls off more rapidly. This results in a relatively-constant audio output level for wide variations of input. The rapidity of response of the AVC is determined largely by the time constant of the R-C network formed by resistors and capacitors R317, R318, C329, and C337. The time constant is made as small as possible without introducing distortion at low modulation frequencies.


Z302
V301
V302
Z301
Z303
V303
Z304
V304
Z305
V305

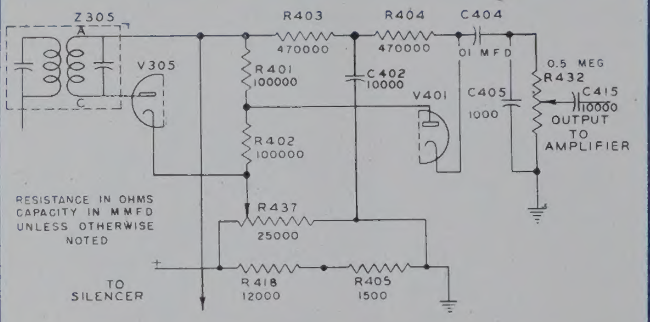
AUDIO FREQUENCY SECTION

In addition to providing the two desired stages of audio frequency amplification, this section includes a noise peak limiter, meter rectifier, and silencer circuit. All these functions are performed by three tubes, shown in the block diagram tied to the schematic to identify the parts and their connections. The left-hand section of the V401 tube is the meter rectifier, used with the meter on the panel.

NOISE PEAK LIMITER
SP
SILENCER
SP

NOISE PEAK LIMITER—The other diode in the first tube, V401, is used as a noise peak limiter and its functioning may be better understood from the simplified schematic given herewith. The second detector V305 and its load resistors R401 and R402 are shown in the diagram to aid the explanation.

The audio output of the second detector is developed across the load resistors R401 and R402, as previously mentioned. The plate of the limiter section is biased positive by potential developed across R401 when signals are applied to the second detector, V305, and is thus made conducting. Under this condition the negative audio potentials at the midtap of R401 and R402 can pass through the conducting diode and capacitor C404 to appear as audio-frequency voltage changes across the volume control R432.



SIMPLIFIED SCHEMATIC – NOISE PEAK LIMITER

This condition continues as long as normal signal levels prevail, but a high-level noise impulse will result in a high negative potential appearing at the midtap of the detector load resistors, thus rendering the plate of the diode negative with respect to its cathode and the tube becomes non-conducting. The cathode is held at its normal potential during the plate potential change by virtue of the time constant of the R-C network R403 and C402. With the tube non-conducting, all signal impulses to the output are cut off, with the result that the noise peak is barred from the amplifiers. On cessation of the noise impulse, the circuits return to their previous condition and the normal signals may pass through the tube to the audio amplifiers.

Output to the audio amplifiers is controlled by the setting of the output level control R432 which determines the output of the receiver. A capacitor C405, connected across the output level control potentiometer R432, is intended to by-pass the higher-frequency audio currents to reduce hiss in the audio output.

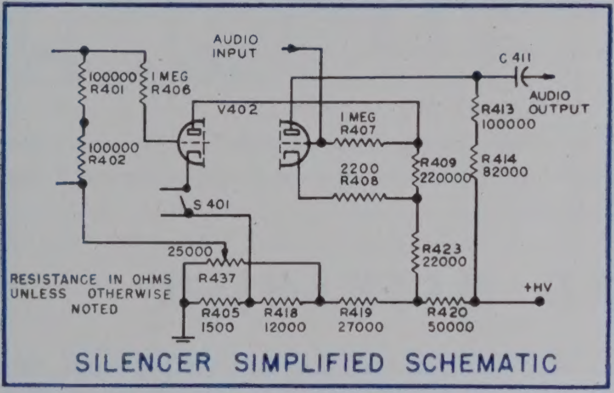
SILENCER—The second tube, V402, in the audio amplifier section is a double triode and functions both as silencer amplifier and first audio amplifier. The output of the noise-peak limiter V401 is coupled to the grid of the right-hand section of V402 by means of capacitor C415, as shown in the simplified schematic, which, for ease of explanation, also includes the detector plate load resistors R401 and R402.

Plate current of the audio amplifier section of V402 flows through R413 and R414, which act as the plate load for the tube. Variations of plate current due to received signals appear as voltage changes across these resistors. These potentials are coupled through C411 to the audio output stage V403.

Normal grid bias for the audio amplifier is obtained from R408, connecting through R423 to voltage-dropping resistors. However, R409 is included in the grid circuit of the audio amplifier and in the plate circuit of the left-hand or silencer-amplifying section of the tube.

SILENCER AMPLIFIER

The silencer amplifier grid is connected across the output of the second detector as shown. The grid of the silencer amplifier, if biased positive by the variable resistor R437, permits current to flow in the plate circuit. This results in a voltage appearing across R409 that biases the audio amplifier grid beyond the cutoff point and renders the tube inoperative. Thus, no sound is heard in the output of the receiver.


AUDIO INPUT
C 411
AUDIO OUTPUT
100000 R401
1 MEG R406
V402
1 MEG R407
R413 100000
100000 R402
R409 220000
R414 82000
2200 R408
S 401
R423 22000
25000
R437
+HV
R405 1500
R418 12000
R419 27000
R420 50000
RESISTANCE IN OHMS UNLESS OTHERWISE NOTED

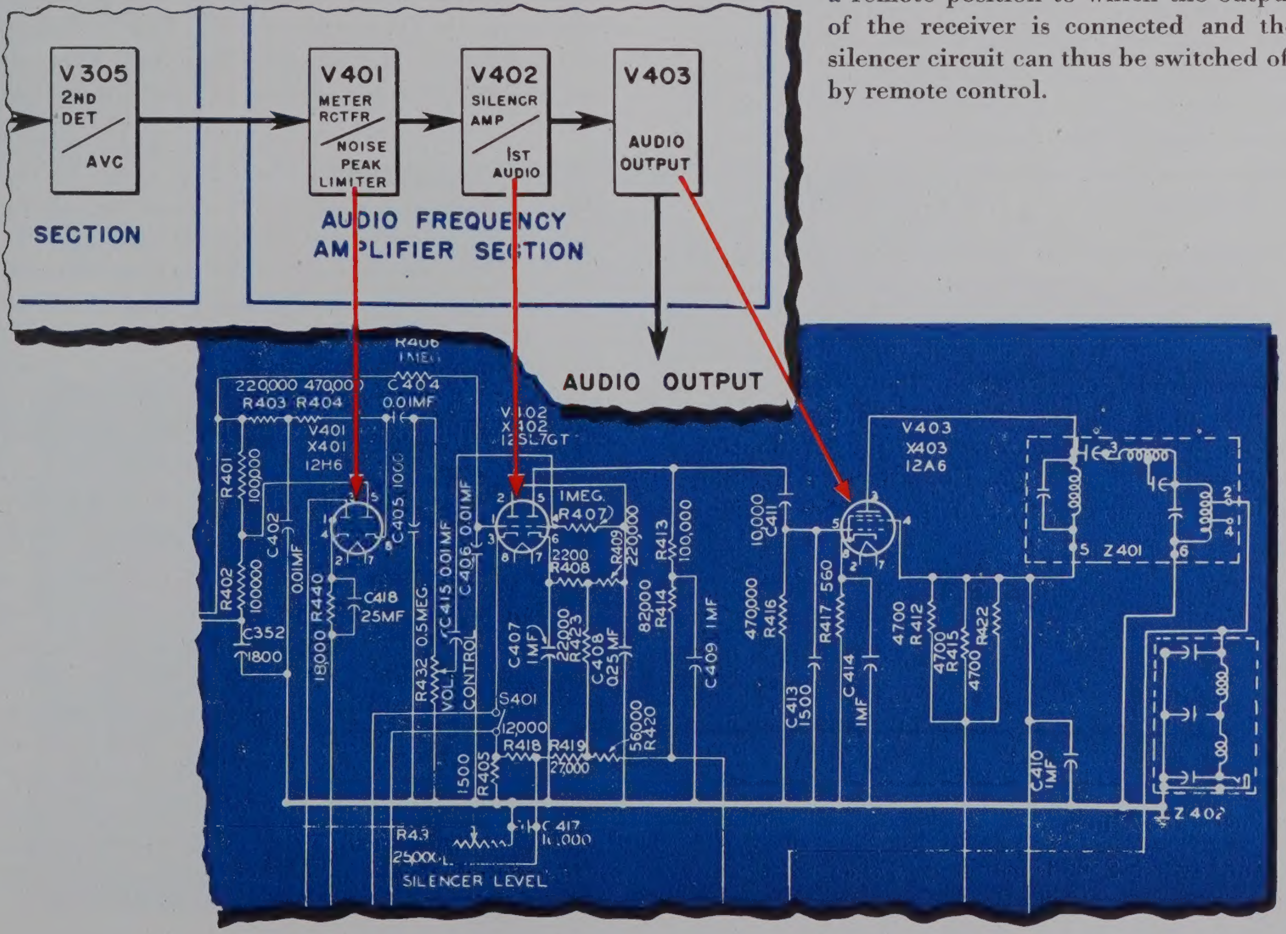
SILENCER SIMPLIFIED SCHEMATIC

Should a signal of sufficient intensity reach the output of the detector to override the positive bias on the grid of the silencer amplifier, the grid would become negative, cutting off the plate current. With the reduction of plate current, the biasing voltage across R409 would decrease and allow the audio amplifier to function normally. When the signals cease, the silencer amplifier grid would become positive, allow the plate current to flow again, and bias the audio amplifier to the cutoff point. This renders the receiver silent between signals.

SILENCE LEVEL CONTROL

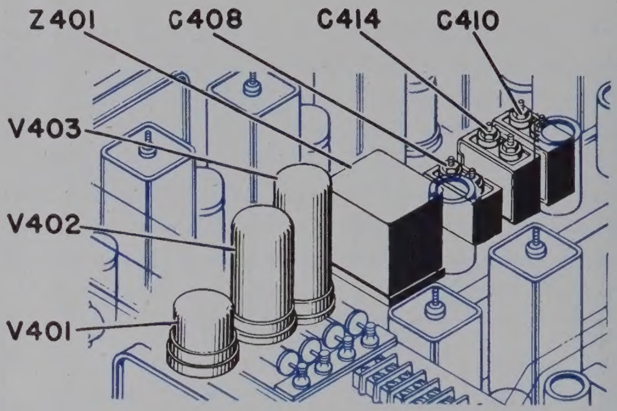
The Silencer control setting on the panel determines the point at which signals can pass through; hence, the control should not be set higher than will permit the weakest signal received to override the positive bias on the amplifier and be heard. A switch, S401, is provided on the panel to render the circuit inactive. No plate current can flow in the silencer amplifier section when this switch is opened.

One pair of contacts on the relay K602 is connected across the Silencer switch S401. This relay may be operated from a remote position to which the output of the receiver is connected and the silencer circuit can thus be switched off by remote control.


V305
2ND DET
AVC
SECTION
V401
METER RCTFR
NOISE PEAK LIMITER
V402
SILENCR AMP
1ST AUDIO
V403
AUDIO OUTPUT
AUDIO FREQUENCY AMPLIFIER SECTION
AUDIO OUTPUT
V401 X401 12H6
V402 X402 12SL7GT
V403 X403 12A6
Z401
Z402
S401
SILENCER LEVEL
VOL. CONTROL

AUDIO OUTPUT—The output of the first audio amplifier tube V402 is coupled by capacitor C411 into the grid circuit of the audio output stage V403. A capacitor C413 is connected across the input to this tube to bypass the higher-frequency components of the audio currents.

A filter and coupling network Z401 is connected into the plate circuit of the output tube. From the impedance in the plate of the tube, the audio output is coupled to the audio-frequency band-pass filter in the network of Z401. This network passes frequencies between 300 and 3000 cycles to an RF filter Z402 and thence to the local headset jack associated with the filter. The RF filter is used to prevent radio frequency currents picked up by the headset cord from entering the equipment at this point and setting up disturbances in the receiver.



The output of the receiver may be fed to a remote position by connecting a cable to the output receptacle Z603.

AUTOMATIC TUNING MECHANISM

The tuning of the receiver to the ten preset channel frequencies is accomplished by two compact selector mechanisms, one to adjust the R-F section, the other the multiplier. The selectors are geared to a motor which is controlled by a system of switches and relays. The electrical circuits employed with the motor are shown in the illustration, including the relay K602 for the remote control of the silencer circuit. The functioning of the electrical components of the automatic tuning assembly shall be considered first.

The channel-selecting switch, S601B, is operated by a knob on the panel and is used to select the channel frequency desired. It will be noted that this switch has 11 contacts and when placed in the position 1, marked Remote on the panel, transfers control of the mechanism to a similar selector switch that may be connected to the terminals on the terminal board E106. The other ten positions of the frequency switch, S601B, are for controlling the tuning mechanism.

A similar wafer switch, S601A, is mechanically-connected to the gear train through an idle selector drum and will rotate in only one direction. This switch is of the closed-circuit type, the rotor contacting all but one of the fixed contacts in any given position, while the selector switch S601B is of the open-circuit type, the rotor contacting but one fixed contact at any time.

A limit switch S603 is actuated by a cam driven by the gear train and is in the open position when the mechanism is at rest, that is, with the equipment tuned to a given frequency.

When a change of frequency is to be made, the selector switch S601B is moved to a point corresponding to the frequency desired. This will close the circuit from the negative bias lead, through relay coil of K601, the homing switch, and then to ground.

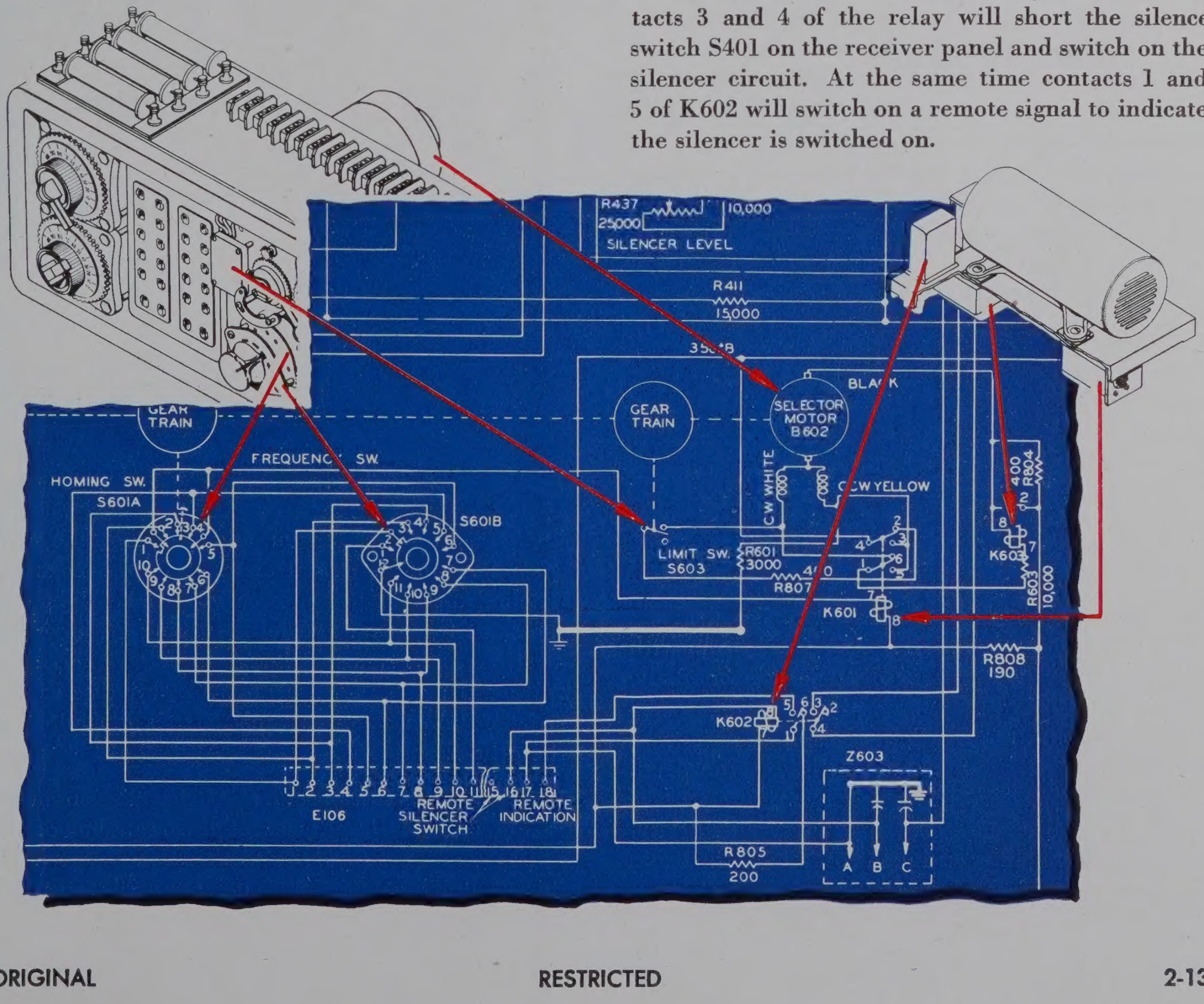
The relay closes contacts 4 and 3 to complete the circuit through one field and the armature of the motor, to cause it to run in the counter-clockwise direction. The motor will drive the selector mechanism, rotating the cam to allow the limit switch to close, and the homing switch, until the latter switch reaches the point where its rotor position corresponds to that of the selector switch. The circuit to the relay will be opened by the homing switch and the relay armature allowed to drop back. This action has advanced the slotted drums of the selectors to the proper position for the frequency desired.

The relay armature, on release, closes contacts 4 and 2 and current flows through the closed limit switch to the other field of the motor. The motor reverses its direction, the selector drums remain properly positioned, but the shafts of the tunable elements are rotated until they are locked in their proper position by pawls. At this point, a slipping clutch permits the motor to continue running until the cam opens the limit switch and stops the motor in its original position. This completes the tuning cycle.

It will be noted that the relay K601 carries a second set of contacts, the moving contact 1 acting to connect the coil of voltage-regulating relay K603 across the motor terminals when the motor is operating, by means of contacts 5 and 6. The contacts of relay K603 are connected across a resistor R804 in the motor lead. This combination acts as a voltage regulator on the motor, to compensate for any change in output voltage of the dynamotor. The relay contacts are normally closed but are held open when the motor is switched on and resistor R804 is in the circuit. Should the voltage across the motor terminals drop below 120 volts, the relay armature will drop back and short out the resistor to increase the voltage to the motor. Should the voltage exceed 160 volts, the relay armature will be pulled up and the resistor R804 placed in the circuit. This control keeps the motor voltage between 120 and 160 volts to assure proper functioning of the motor.

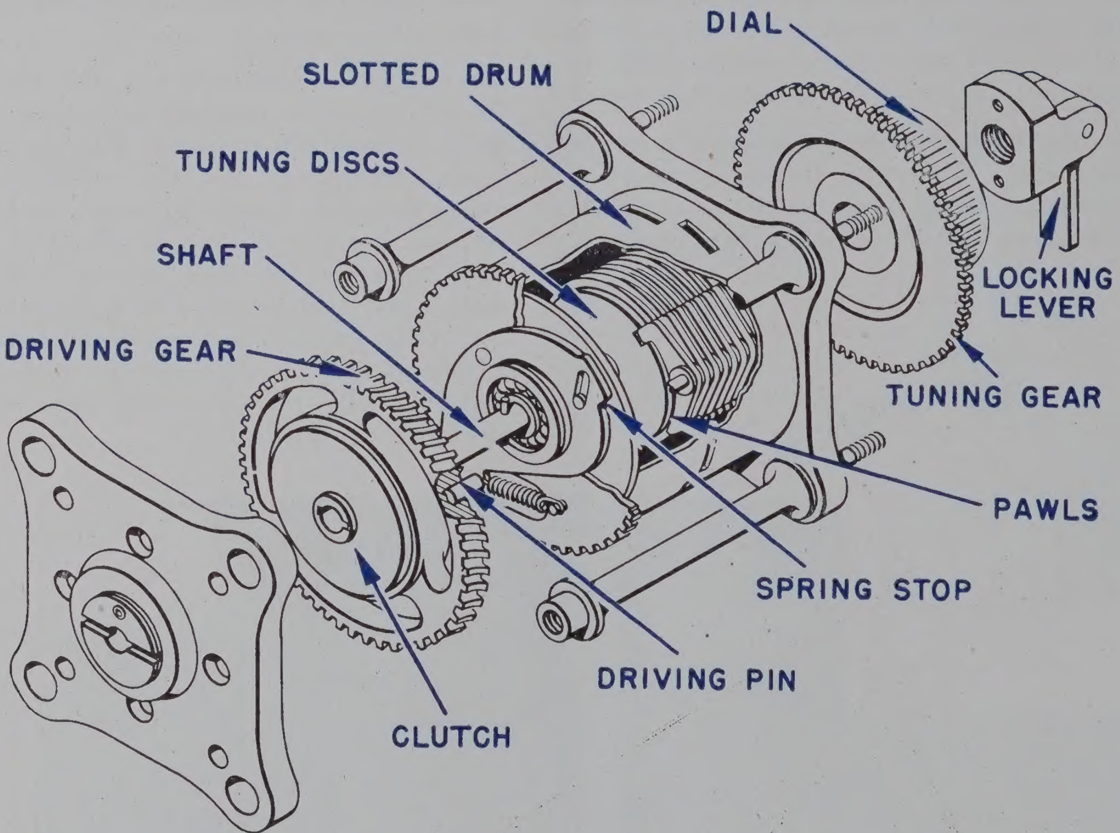
The resistor R601 performs an important function in this circuit. The voltage for the operation of relay K601 is obtained across the bias resistor R805 in the negative lead of the high-voltage output of the dynamotor as shown in the overall schematic diagram. This voltage is dependent upon the load drawn by the receiver tube circuits. When the selector motor is in operation, any drop in voltage due to the motor load will be reflected in a drop in current drawn by the receiver. In turn this will reduce the voltage drop across the bias resistor R805, possibly to the point where relay K601 would fail to function. To prevent this, the resistor R601 is in the circuit at such times as the motor is running with the relay energized and current is drawn through this resistor to ground, that must flow through resistor R805 to the negative terminal of the dynamotor. In this manner the current through, and consequently the voltage drop across R805 is maintained at the proper value to operate the relay K601.

The coil of the silencer control relay K602 is connected to both the terminal board E106, for leads to the remote frequency selector switch and to the remote connector of the receiver, Z603. A remote switch arranged to short terminals 16 and 17 of the terminal board or to close the circuit of A and B of the connector will cause the relay to close. Contacts 3 and 4 of the relay will short the silence switch S401 on the receiver panel and switch on the silencer circuit. At the same time contacts 1 and 5 of K602 will switch on a remote signal to indicate the silencer is switched on.


R437
25000
10,000
SILENCER LEVEL
R411
15,000
35
BLACK
GEAR TRAIN
SELECTOR MOTOR B602
GEAR TRAIN
FREQUENCY SW.
HOMING SW.
S601A
S601B
CW WHITE
CCW YELLOW
LIMIT SW. S603
R601 3000
400
R807
K601
400 R804
K603
R603 10,000
R808 190
K602
Z603
E106
REMOTE SILENCER SWITCH
REMOTE INDICATION
R805 200
A B C

An unusual circuit is employed to assure sufficient current to energize the relay K602 and maintain a constant negative bias. It will be noted that with the relay in its normal position contacts 1 and 6 are closed, to ground the bias resistor R805 that provides the −20 bias voltage used in the receiver circuits. When relay K602 is energized, by closing of the circuit between terminals 16 and 17 of terminal board E106 or leads to contacts A and B of receptacle Z603, contacts 1 and 6 are opened, disconnecting R805 from the ground connection. However, the closing of the circuit to the coil of the relay through contacts 1 and 5 has connected the relay winding between the negative lead of the dynamotor and the ground. The resistance of the relay winding has been so chosen that when the contacts 1 and 6 open, the relay winding is acting as the bias resistor instead of R805 as long as the relay remains energized. This circuit prevents the reduction in negative bias to the receiver that would result if the relay winding were simply connected across the bias resistor R805.

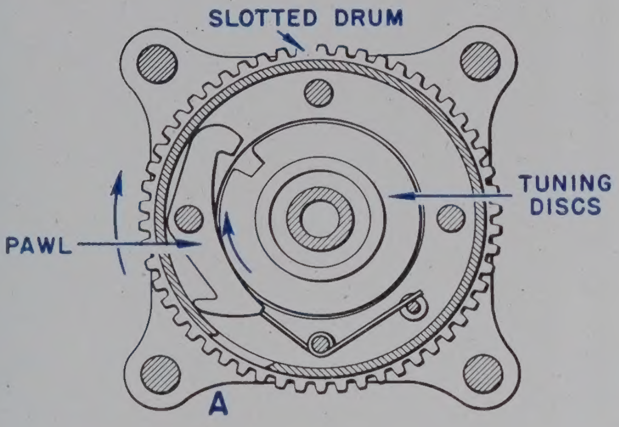
FUNCTIONING OF TUNING SELECTORS

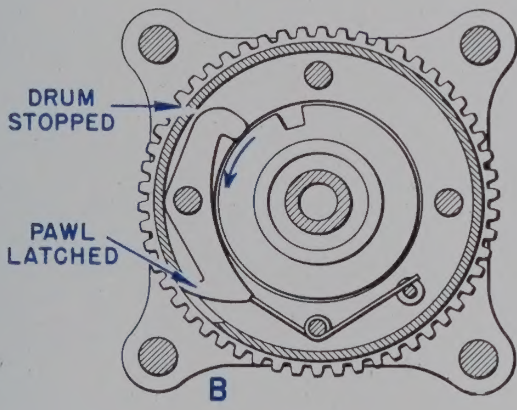


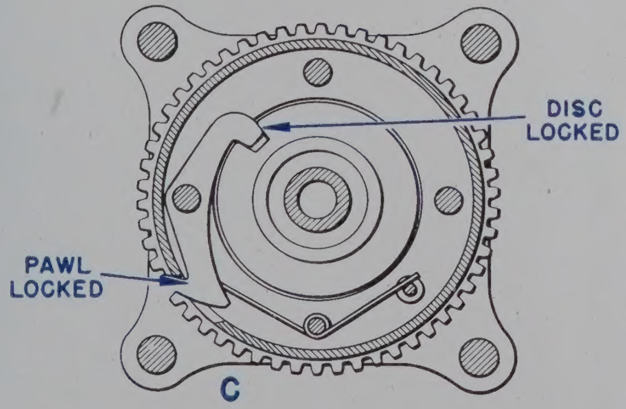
The tuning selectors are compact mechanical devices that consist essentially of an outer drum with ten slots, equally staggered diagonally around the drum. Within the drum, and pivoted on a post extending from the front plate of the selector, are a series of ten spring-actuated pawls. As the drum revolves, each slot in turn passes over its respective pawl, the end of each pawl being forced into the slot by a spring, but continued rotation of the drum forces the pawl free of the slot.

In the center of the drum, and spaced on the shaft connecting to the tunable element, is a series of ten notched discs. These discs are clamped tightly to the shaft by a cam and lever locking arrangement attached to the selector knob, but can be released by raising the lever on the knob, so any disc can be adjusted in relation to the shaft, independent of the others.

The shaft and discs are driven by a friction clutch mounted in the large gear at the rear end of the selector, the end opposite to the dial. The tension on this clutch is sufficient to drive the shaft in either







direction unless the shaft is locked by the action of the pawls engaging the notches in the discs. The drum is driven by a pin in the large gear engaging a spring stop on the end of drum, arranged to drive the drum in one direction, that is, only when the motor is running forward in the first part of the tuning cycle.

The relative positions of the drum, pawls, discs, and gear are shown in the illustration and the sequence of operation is as follows.

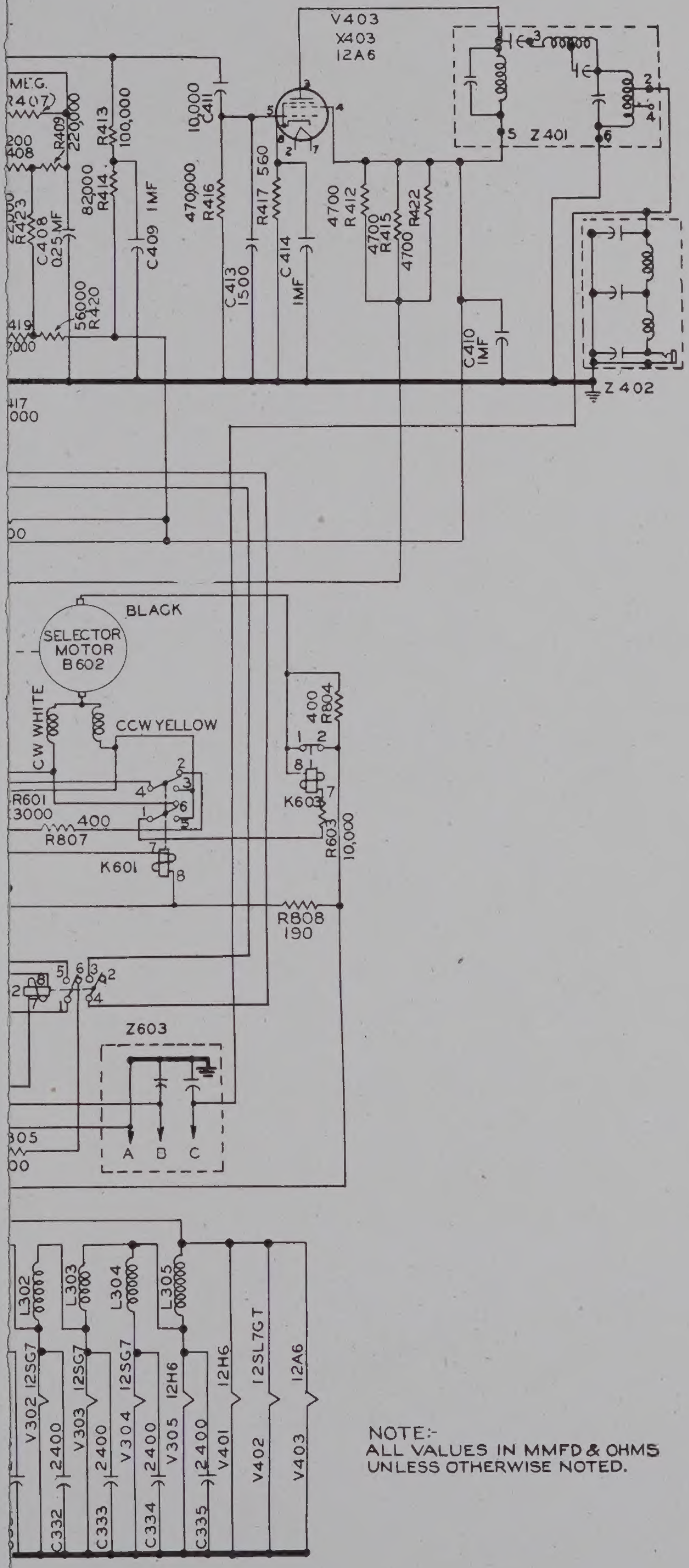
When the motor is energized, the worm gear of the gear train drives the large gear, which in turn rotates both the drum, by means of the pin and stop, and the shaft and grouped discs, through the clutch action. This action is shown at A in the illustration, the direction of rotation of the parts being indicated by arrows. The slots in the drum ride over the free ends of the pawls.

When the drum has reached its proper position, as determined by the homing switch opening the relay circuit, the motor will stop. The end of a pawl will extend into its associated slot in the drum.

As the motor is reversed by the relay contacts and the gear of the selector turns back, the drum retains its position as the hook end of the pawl engages the end of the slot as shown at B in the illustration. The inner end of the pawl is now contacting the edge of its associated disc on the shaft. The shaft and discs are turning back with the motor because of the clutch drive, as indicated by the arrows. This continues till the notch in the disc comes under the cocked pawl. As the pawl drops into the notch the free end of the pawl extends further through the slot in the drum and rotation of the discs and shaft are stopped as shown at C. The gear drive continues, but the clutch comes into play and allows the shaft of the tunable element to remain fixed in position as the motor operates until stopped by the action of the limit switch. The tuned element is now properly adjusted to the frequency for which it was pre-set.

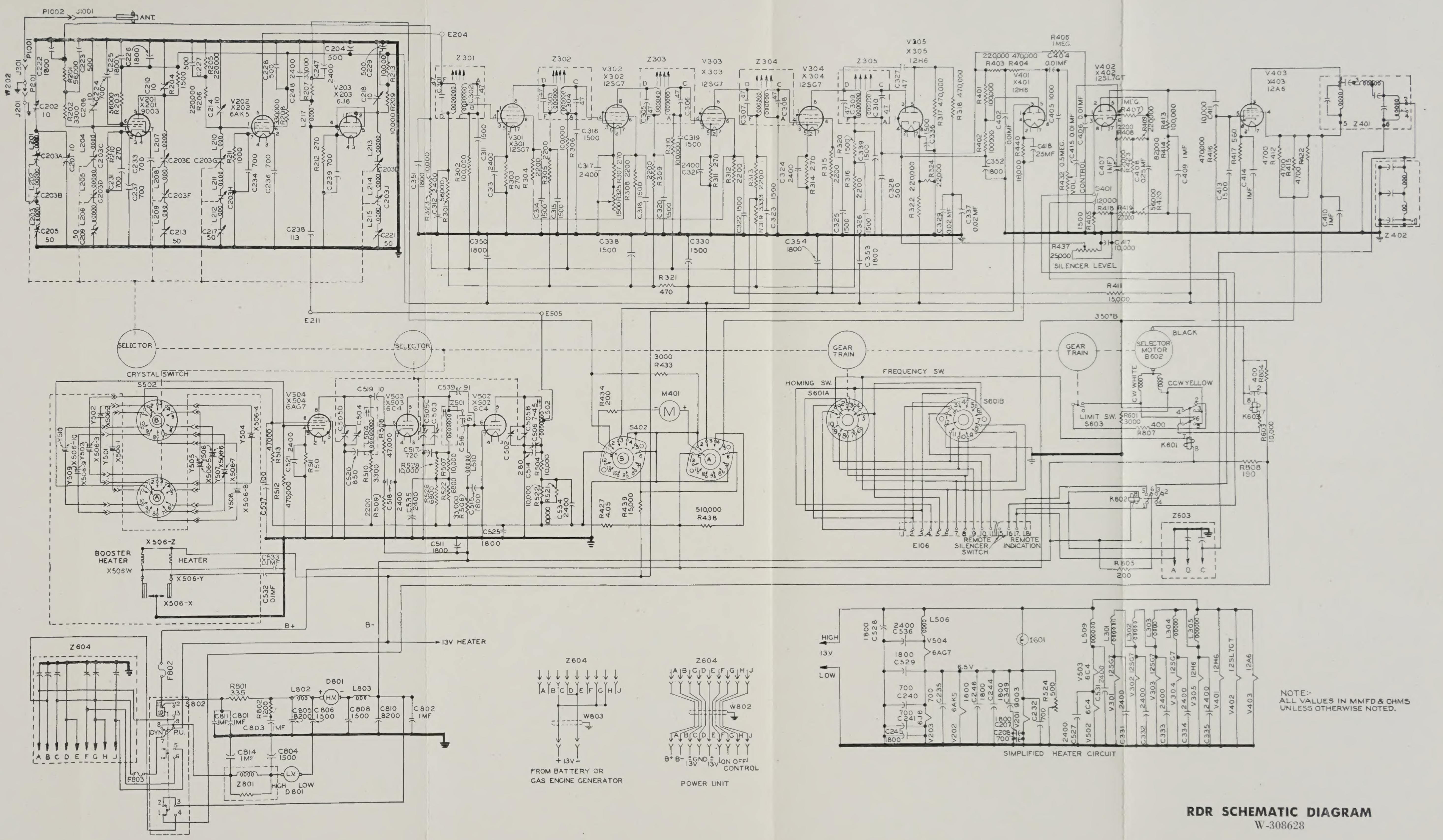
The above tuning cycle is repeated for each change of frequency. A pair of wafer switches S502A and B are geared to mechanism so the proper crystal is connected into the circuit of the oscillator for each frequency as selected.

When the next change of frequency is made the large gear will rotate alone until the pin on the gear engages the spring stop on the drum. The drum is then revolved and in so doing, unlocks the pawl by forcing in the free end extending through the slot in the drum, and disengages the pawl from the notch in the disc. This allows the discs and shaft to turn with the drum until the drum reaches the position required for the new frequency. The reversal of the motor again causes discs and shaft to revolve until stopped by the pawl engaging a notch in a disc.


V403
X403
12A6
MEG.
R407
200
R408
R409
220,000
R413
100,000
10,000
C411
R423
C408
.025 MF
82000
R414
C409 1MF
470000
R416
R417 560
C413
1500
C414
1MF
4700
R412
4700
R415
4700
R422
Z401
C410
1MF
Z402
R419
56000
R420
BLACK
SELECTOR
MOTOR
B602
CW WHITE
CCW YELLOW
R601
3000
400
R807
K601
400
R804
K603
R603
10,000
R808
190
Z603
A
B
C
L302
L303
L304
L305
12SG7
12SG7
12SG7
12H6
12H6
12SL7GT
12A6
V302
V303
V304
V305
V401
V402
V403
2400
2400
2400
2400
C332
C333
C334
C335

NOTE:-
ALL VALUES IN MMFD & OHMS
UNLESS OTHERWISE NOTED.

RDR SCHEMATIC DIAGRAM
W-308628

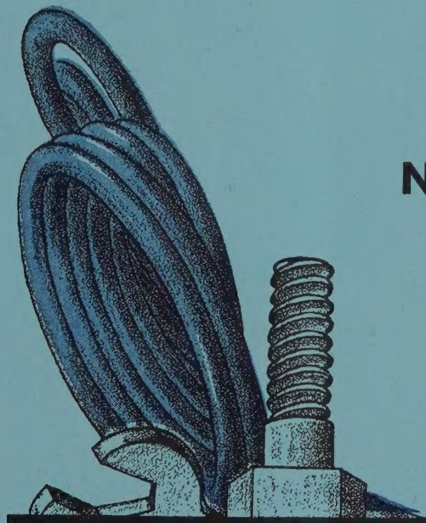

ANT.
P1002
J1001
P1001
J301
P201
J201
W202
V202
6AK5
V203
X203
6J6
E204
E211
E505
Z301
Z302
Z303
Z304
Z305
V301
X301
12SG7
V302
X302
12SG7
V303
X303
12SG7
V304
X304
12SG7
V305
X305
12H6
V401
X401
12H6
V402
X402
12SL7GT
V403
X403
12A6
Z401
Z402
SILENCER LEVEL
VOL. CONTROL
R406
1MEG
350+B
SELECTOR
SELECTOR
CRYSTAL SWITCH
S502
V504
X504
6AG7
V503
X503
6C4
V502
X502
6C4
BOOSTER HEATER
X506W
X506-Z
X506-Y
X506-X
HEATER
M401
S402
GEAR TRAIN
GEAR TRAIN
HOMING SW.
S601A
S601B
FREQUENCY SW.
SELECTOR MOTOR
B602
BLACK
CW WHITE
CCW YELLOW
LIMIT SW.
S603
K601
K602
K603
Z603
E106
REMOTE SILENCER SWITCH
REMOTE INDICATION
B+
B-
13V HEATER
Z604
S802
DYN.
P.U.
D801
H.V.
L.V.
Z801
HIGH
LOW
Z604
W803
+ 13V -
FROM BATTERY OR GAS ENGINE GENERATOR
Z604
W802
B+ B- GND 13V 13V ON OFF CONTROL
POWER UNIT
HIGH
13V
LOW
6.5V
I601
SIMPLIFIED HEATER CIRCUIT
NOTE:- ALL VALUES IN MMFD & OHMS UNLESS OTHERWISE NOTED.

RDR SCHEMATIC DIAGRAM
W-308628

NAVSHIPS 900,841

INSTALLATION AND INITIAL ADJUSTMENTS

SECTION 3



NAVY MODEL RDR

RADIO RECEIVING EQUIPMENT

RESTRICTED

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INSTALLATION AND INITIAL ADJUSTMENTS

SECTION 3

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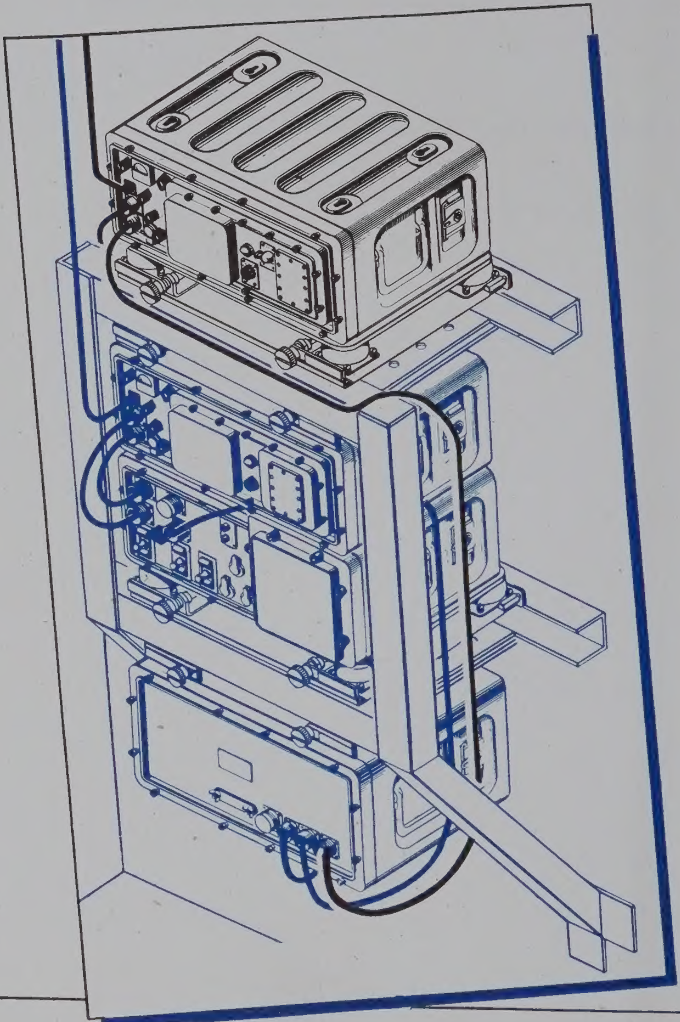
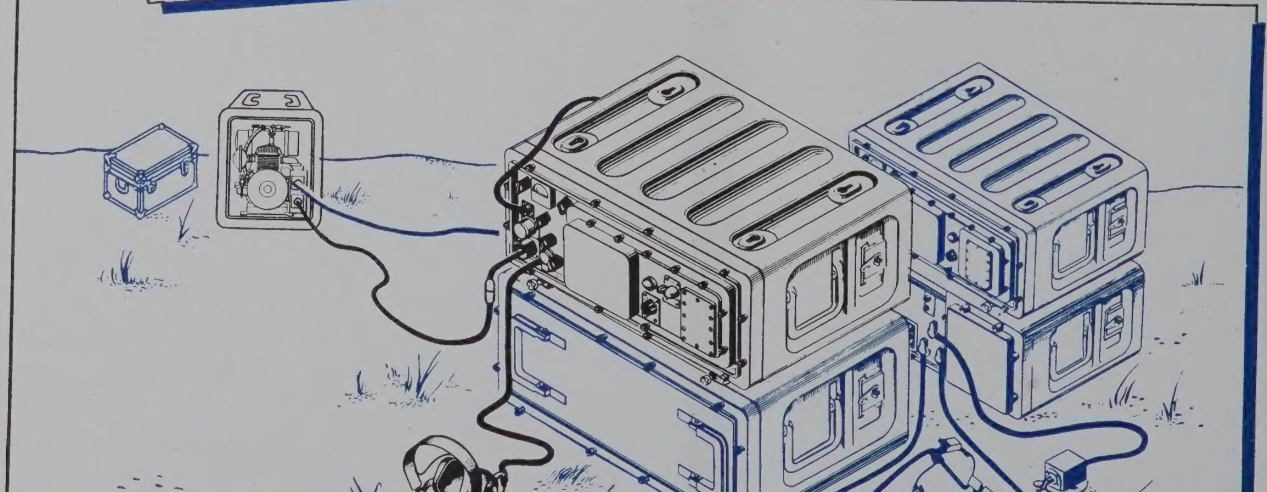


TYPICAL RDR INSTALLATIONS

◄ **ON SHIPBOARD**

▼ **IN THE FIELD**



INSTALLING RDR RECEIVER

The RDR receiver in conjunction with a power supply forms a complete operational unit and may be used independent of other radio equipment. However, it is usually installed in connection with MAR equipment as a companion receiver.

When the RDR receiver is to be used with the MAR, the usual practice is to make provision for its mounting when installing the support frames for the MAR equipment. Where the RDR receiver is to be used alone in a permanent installation, some form of support will have to be provided.

Typical installations of the RDR receiver are shown on the opposite page in connection with MAR equipment. As will be seen, two frames have been provided for the combined shipboard installation. The frames may vary widely in detail in different installations but must possess in common the factors of extreme rigidity and freedom from resonant or vibrating members in their construction.

The frame shown in the illustration, typical of those that may be employed for the purpose, is fabricated from channel and angle irons welded together to form a rigid form to which the bases of the shockmounts are bolted. Where it is intended that the RDR be used, two such frames are erected, one above the other or both on the same level. The grouping of the equipment will then depend upon which arrangement is employed.

Where the two frames are arranged one above the other, as shown in the illustration of a typical installation, the lower frame supports the modulator-dynamotor and power supply unit of the MAR equipment. The upper frame has the transmitter-receiver suspended under it, providing on top, room for mounting the RDR.

In the alternate system of grouping, where the frames are on the same level, the assembly will differ somewhat because of limitations imposed by the cables interconecting the MAR equipment. The MAR transmitter-receiver and modulator-dynamotor are paired and attached to one frame. The other frame will then support the power unit in a suspended position, with the RDR receiver mounted on top.

The shockmount assembly for mounting the receiver is furnished with the MAR shipboard installation kit. The Navy type CRV-10508 is used with the receiver and provides the correct suspension for this unit.

RDR EQUIPMENT FURNISHED

QUAN.	NAVY TYPE	UNIT	LENGTH INCHES	DEPTH INCHES	HEIGHT INCHES	WEIGHT POUNDS
1	CRV-46283	Radio Receiver	21	16	9	45
1	CRV-66147	Antenna	25		22	3½
1		Gas Engine Generator	12	17¼	14¾	35

QUAN.	ACCESSORIES	QUAN.	ACCESSORIES
3	Power input cable assemblies	2	Pilot lamps
2	Connectors for audio output cable	1	Each type tube used in receiver
1	Headset	1	50 foot antenna cable
1	Headset extension cord	1	Connector for antenna cable
10	Silica gel drier assemblies		**In Antenna Carrying Case**
4	Sets Dynamotor brushes	1	Vise assembly
4	Sets Selector motor brushes	1	Cable assembly
10	Fuses 30 ampere	1	Wrench
10	Fuses 1 ampere	2	Rubber plugs

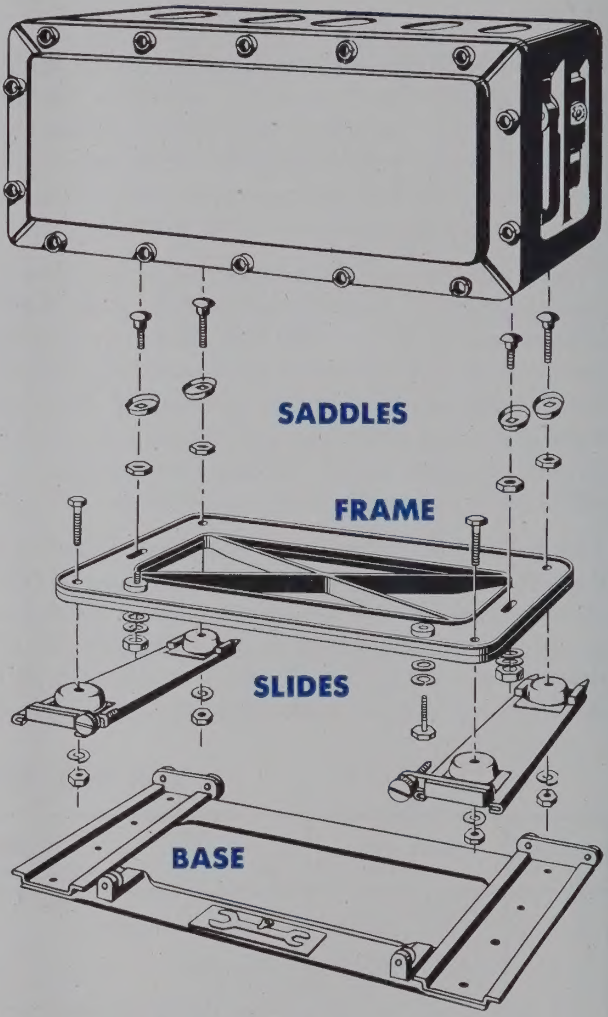
ATTACHING THE SHOCKMOUNTS

NAVY TYPE CRV-10508

The first procedure, after removing the RDR receiver from its shipping container is to attach the shockmount to the receiver case. The mount is to be attached to the bottom of the receiver, which can be determined from the position of the carrying handles on the ends of the case without removing the cover. There is less likelihood of damaging the equipment if the shockmount is attached before removing cover from the case.

Loosen the clamping screws on the front of the shockmount and slide the top frame off the base member. Untie the small canvas bag and dismantle the frame section by removing the short carriage bolts from the sides of the frame and the long carriage bolts through the rear shockmount units and slides. This leaves the frame and slides held together by the two hex head bolts through the front shockmount units.

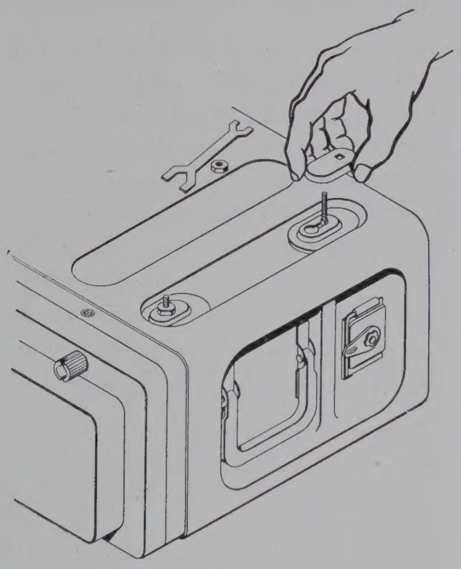
The case is then prepared for receiving the mount by fastening the four carriage bolts into the keyhole slots on the side of the case to which the mount is to be attached. To attach the bolts, lay the case on its side, insert the head of a short carriage bolt in the keyhole slot nearest the cover of the equipment, and slide the bolt to the end of the square slot. Drop one of the saddles provided over the bolt shank with flanges down and screw a large nut, with the counterbored side down, onto the bolt threads. Tighten with open end wrench attached to the base.



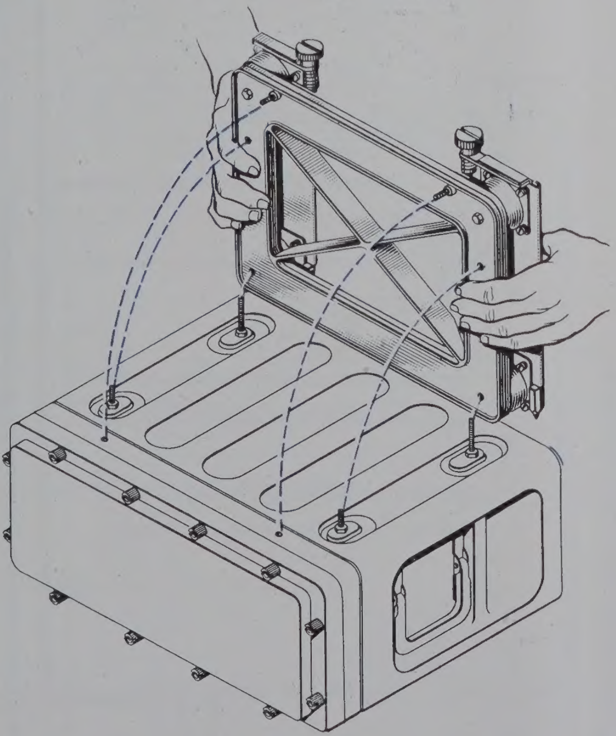
COMPONENTS OF SHOCKMOUNT ASSEMBLY

QUAN.	PART	QUAN.	PART
2	Carriage bolt 5/16 x 2 5/16	2	Carriage bolt 5/16 x 1¼
4	Hex nut (large)	4	Saddle
1	Frame	2	Hex Hd. machine bolt
4	Shockmount for CRV-10508	2	Washer
2	Capscrews	6	Lockwasher
1	Base (Assembly)	1	Slide assembly (left)
6	Hex Nut (small)	1	Slide assembly (right)
1	Wrench	6	Lockwasher 5/16

Follow the same procedure as shown in the illustration in attaching the long carriage bolts in the keyhole slots near the back of the case.



To attach base and slides to the case, insert the two hex head bolts with washers and lockwashers, that were in the small canvas bag attached to the shockmount, into the two holes in the front edge of the frame. Grip the frame and slides as shown in the illustration, holding the holes in the shockmounts on the slides in line with the holes in the frame, and place the assembly on top of the bolt ends in the case, entering the bolts into the holes indicated. Lockwashers are placed on the four carriage bolts and nuts started on the bolt threads. The capscrews can then be started into the two matching tapped holes in the case.



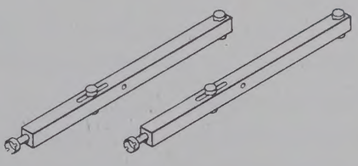
All six nuts and the two capscrews may now be tightened with the wrench. These consist of the four nuts on the carriage bolts, the two nuts on the bolts through the front shockmounts and the two capscrews. This completes the attaching of the shockmounts, and the unit is ready for installation.

The base section of the shockmount is bolted to the support frame by bolts through the eight holes in the base and holes in the frame. Should the holes in the frame be tapped, only capscrews will be required to hold the base of the shockmount in place. Use lockwashers under the nuts on the bolts or heads of the capscrews, for the base assembly must be rigidly attached to the support.

The receiver can now be slid into place on the base member of the shockmount. Slides on the unit are engaged with the slide members attached to the base and the unit pushed into place. Conical pins at the rear end of the slides will engage in holes in the angle plate at the rear of the base. The clamping screws on the front of the slides are started into the tapped posts at the front of the base and tightened to lock the unit rigidly to the base.

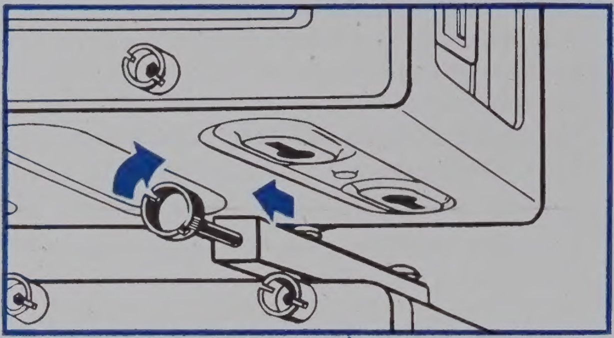
ATTACHING CABINET FASTENERS

NAVY TYPE CRV-10505



For certain applications, as when the RDR is used with field installations of the MAR, cabinet fasteners are provided with the MAR equipment that may be used for clamping the receiver to the MAR equipment or to the accessory box furnished with MAR.

The fasteners are installed between the stacked cases and are provided with button headed sliding members that can be engaged in the keyhole slots in the cases and tightened from the front, to lock the assembly together. Such assemblies should only be made when the equipment is not subject to the shock and vibration of moving vehicles or craft.



The fasteners are installed by first sliding the knob at the end of the fastener out to the extreme length of its sliding stem. Then rotate knob to the left, causing the button members to move to such a point that they fit freely into the holes in two of the keyhole slots in the side of the equipment cases.

Two fasteners are placed in the holes in the top of one of the equipment cases and the RDR receiver is then lifted on top of the fasteners with the holes in the keyhole slots engaging the button heads. The knob on the front of the fastener is then turned to the right, as shown in the illustration, to clamp both units rigidly together.

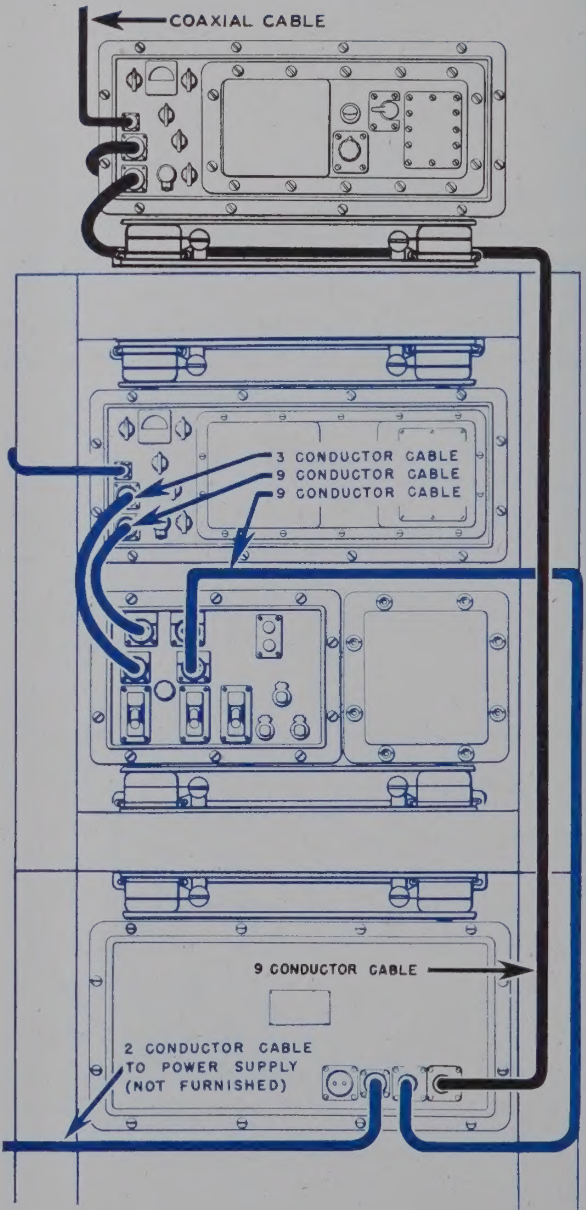
INTERCONNECTING RDR RECEIVER WITH MAR EQUIPMENT

Remove the cover of the receiver by loosening the thumbscrews along edge of cover using either the allen wrench or wide blade of the screwdriver clipped to the ends of the case. Removal of the cover will expose the operating panel of the receiver, which should be carefully examined for broken or loose fittings or controls.

The accessory box, with the receiver, contains two cables for connecting the receiver to the power supply and a battery cable fitted with clips. The eight foot, nine conductor cable is for connecting the receiver to the power supply unit used with the MAR equipment. The short cable is an adaptor cable, intended to adapt the nine contact input power jack on the receiver to a two wire cable, when the source of power for the equipment is 13V direct current from storage batteries or a gas engine driven generator source.

The method of connecting the RDR to the power unit is shown in the illustration. Make sure all power switches are set on the Off position before attempting to connect these cables.

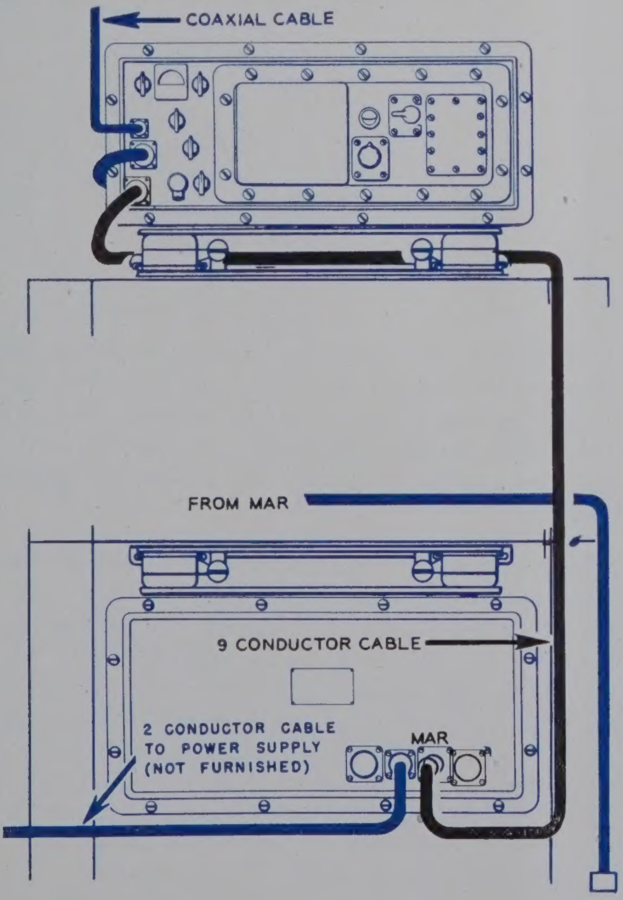
The longer nine conductor cable has one end connected to the power input receptacle on the receiver by removing the cap from the receptacle, inserting the plug on the cable into the receptacle and tightening the retaining ring on the plug onto the threaded shell of the receptacle.



The cable may be run by any convenient path through the MAR assembly and the other end of the cable connected to the extreme right hand output receptacle of the power unit. This is the normal connection when the RDR receiver is operated from the power supply unit in conjunction with the MAR.

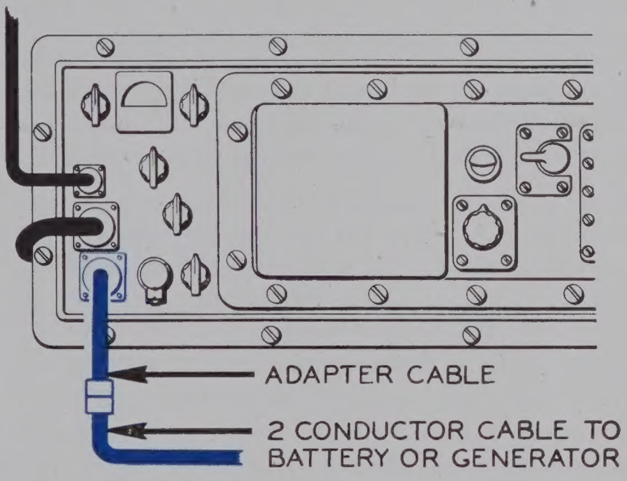
With this connection, the MAR power switch controls the power supply unit, switching it on and off as necessary. The power switch on the RDR serves only to cut this unit off when not required, but this switch does not shut off the power unit. Thus the MAR must be switched on before the RDR can be put into operation. The relay controlling the power unit is connected only to the receptacle to which the MAR is connected.

However, should it be necessary to operate the RDR receiver from the power unit without the MAR, the cable from the RDR should be connected to the second receptacle from the right, marked MAR as shown in the illustration below. This connects the power switch in the RDR to the relay circuits in the power unit and when the RDR power switch is moved to the P. U. position, the power unit will be switched on.



As previously mentioned, the short cable is intended as an adaptor cable and is fitted with a nine terminal plug at one end and a two terminal jack at the other. When the RDR receiver is operated from a 13V direct current supply, the nine terminal plug of the adaptor cable is attached to the power input receptacle on the RDR panel. The cable from battery or generator can then be connected to the jack on the adaptor cable.

The cable used for connecting the adaptor cable on the receiver to a battery, as in the case of mobile units, is fitted at one end with clips. In connecting this cable to the batteries it is important that the black sheathed clip be connected to the grounded side of the battery in the vehicle. The red sheathed clip is connected to the ungrounded side of the battery. The fact that so connecting the clips may reverse the polarity in a given installation does not affect the operation of the receiver.

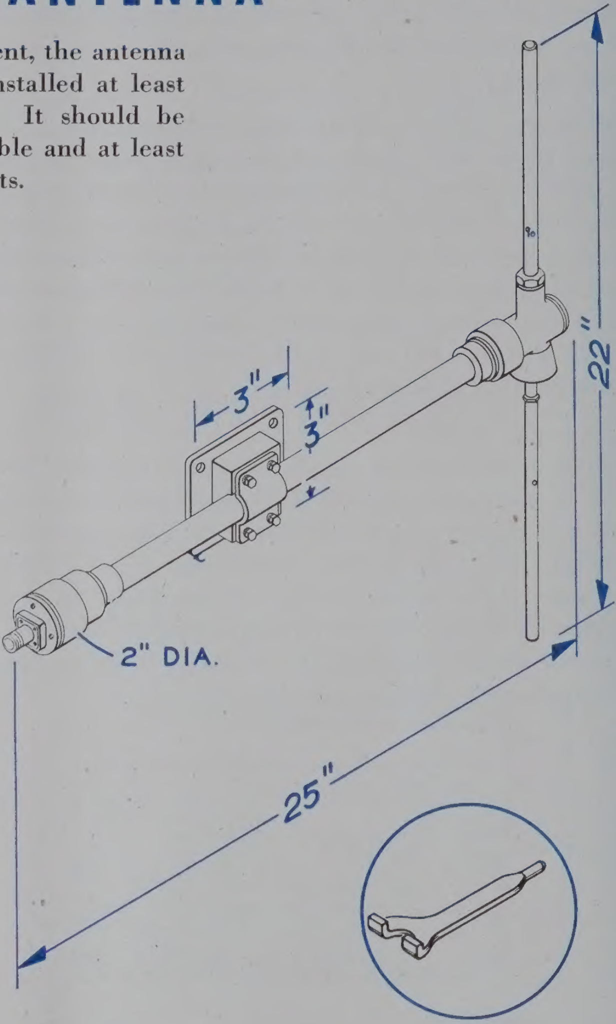


A twenty five foot cable is furnished with the gas engine driven generator for connection between adaptor cable and generator. One end of this cable is plugged into either receptacle on the generator control box and the other connected to the adaptor cable. With this arrangement it is also possible to connect a storage battery to the generator unit by means of the battery cable, as stand-by.

The power switch on the RDR receiver must be moved to the Dyn. position to switch on the receiver when the adaptor cable is used. The dynamotor in the receiver is put into operation with the low voltage supply to provide necessary plate voltage for the tubes in the receiver.

INSTALLING THE ANTENNA

When used with the MAR equipment, the antenna for the RDR receiver should be installed at least ten feet from the MAR antenna. It should be erected in as clear a space as possible and at least 1½ feet from any conducting objects.

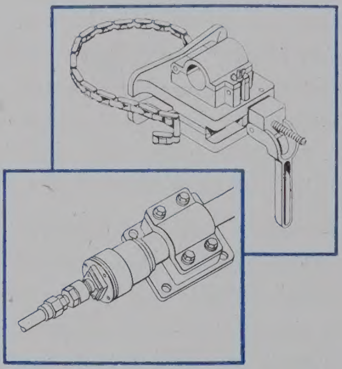


The antenna carrying case contains the antenna and accessories, including a ten foot coaxial transmission line assembly fitted with connectors. A fifty foot transmission line assembly and connector are included in the equipment accessories chest.

The antenna is furnished dismantled, but requires only that the two rods be installed, to fit it for use. A wrench is provided for making this assembly.

Remove the antenna body from the case and screw the threaded ends of the rods into the tapped holes provided. The hole in the casting for mounting the ground rod has a coarse thread, the other hole, in the stud in the molded insulator, has a finer thread. The rods have different threads and will only fit into their proper mounting holes. The small end of the wrench is inserted in holes in the rods to tighten them till they bottom in the holes. The other end of the wrench is intended to tighten the locknuts on the rods to prevent their working loose and falling off.

The first step in installing the antenna is to mount the antenna clamp on the intended antenna support. If the shipboard clamp is to be installed, remove the clamp from the antenna body by loosening the four capscrews holding the cap over the tubular body section. A drilling pattern is shown in the illustration, it being possible to attach the clamp to either borizontal or vertical surface.



With the clamp in place, the tubular body of the antenna is inserted in the curved recess in the clamp with the end of the antenna mounting the transmission line connector adjacent to the clamp. Replace the cap on the clamp and start the four capscrews into place. Rotate the antenna body till the insulated rod is pointing down and tighten the capscrews to hold the cap and antenna firmly in position.

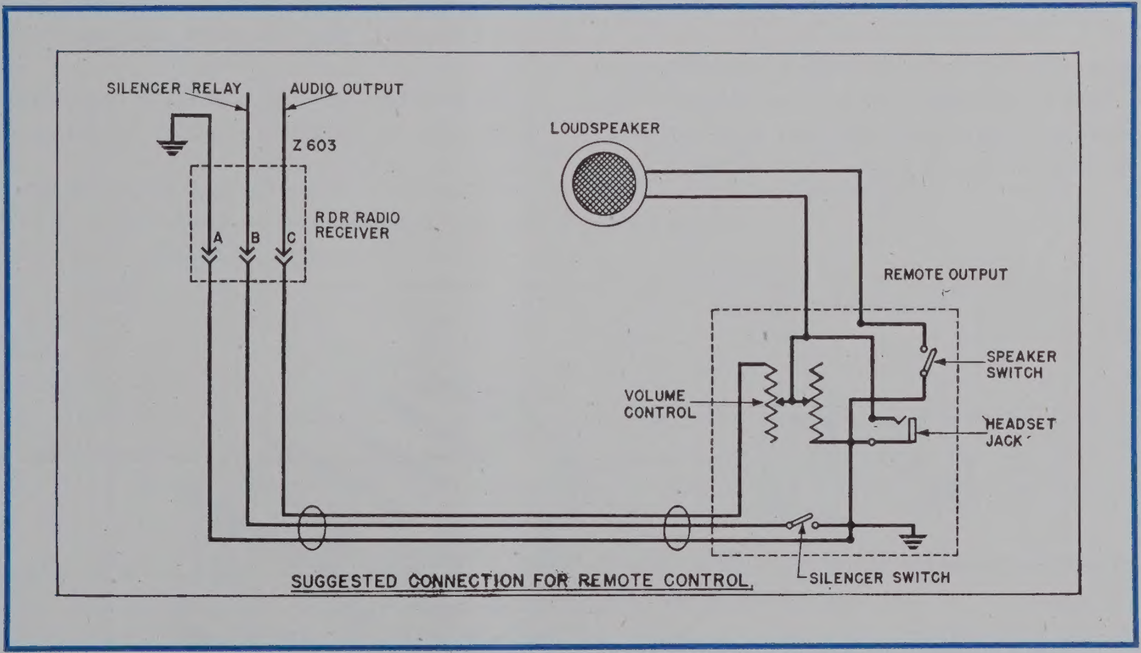
The procedure is the same with the chain clamp. First attach the clamp to the support, then loosen the wing nut holding the hinged cap intended to grip the antenna body. Swing the clip out of the way, insert the antenna in the curved depression in the clamp and swing the clip back over the antenna body. The wing nut is then tightened onto the clip when the antenna radiating rods are in a vertical place with the insulated rod pointing down.

INSTALLING THE TRANSMISSION LINE

A 10 foot coaxial cable, fitted with plugs, that connect to the antenna and receiver receptacles, is included with the antenna. In some installations it may be possible to use this cable for connecting the antenna to the receiver. In this case it is a simple matter to unscrew threaded plugs from the retaining rings of the cable and, after removing the cap from the antenna receptacle on the receiver, insert the cable plug into receiver receptacle and tighten retaining ring. At the antenna end, the connection is made in the same manner to the receptacle on the antenna body but no part of the transmission line should run parallel to the dipole rods within a distance of five feet.

Where a longer transmission line is required, a 50 foot coaxial cable fitted with plugs and a connector are furnished with the accessories. This cable is installed by simply plugging into antenna receptacle and receptacle on receiver panel as in the case of the 10 foot transmission line. By utilizing the connector it is possible to join the two transmission lines together to obtain an overall length of 60 feet.

REMOTE OUTPUT



SUGGESTED CONNECTION FOR REMOTE CONTROL.

A receptacle is provided on the panel of the receiver for connecting the audio output of the receiver to a loudspeaker or headset at a remote location. A three terminal plug is furnished among the accessories for attaching to the end of a three conductor cable that is used for making the connections to the remote installation. For guidance in making the connections, a suggested system of wiring is shown in the illustration when equipment is available for the purpose.

As will be seen, the reproducer, which may be a loudspeaker or headset, and control are connected to terminals 1 and 2 at the remote end of the cable. A switch is connected across terminals 2 and 3. The speaker may be switched on or off as desired and the volume regulated to suit conditions. The other switch controls the silencer circuit; opening it cuts off the silencer when signals are to be received that are too weak to override the degree of silencer action being employed at the receiver.

SETTING UP ENGINE DRIVEN GENERATOR

Remove the metal case containing engine driven unit from luggage type shipping case and loosen thumbscrews holding cover on case. Withdraw the unit completely from case after removing cover and place on fairly level space within a 25 foot radius of the radio equipment.

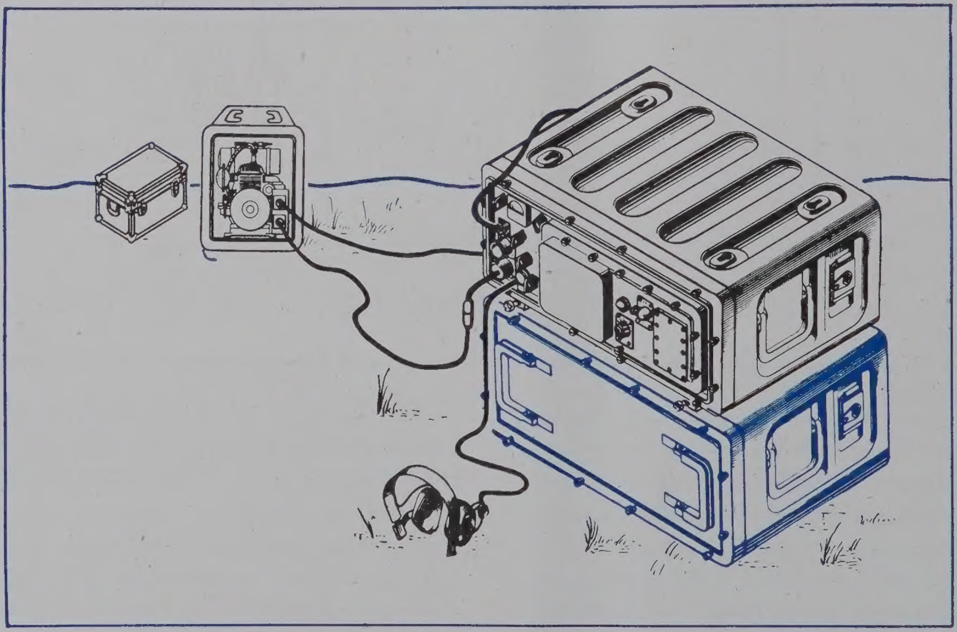
The cable to connect generator unit to radio equipment is removed from luggage case. Connect one end of the cable to one of the receptacles located on the control box next to the generator. The other end of the cable is plugged into the two connector receptacle on the adaptor cable attached to the receiver. Make sure the power switch on the radio equipment is in the OFF position and the switch on the control box on the generator unit is in the RADIO position.

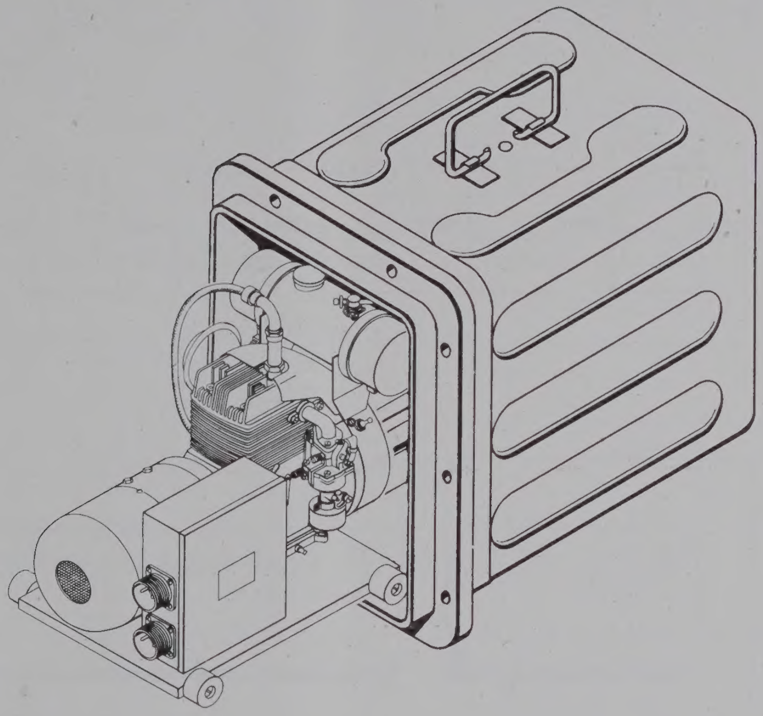
The engine should have all moisture-proofing removed. This is important to be sure all openings on carburetor, oil breather, fuel tank vent and generator ventilation will be free of obstruction.

The crankcase of the engine should be filled, to the level of the plug on the side of the crankcase of the engine, with the proper grade of engine oil. For normal operating conditions Navy symbol No. 2190 or No. 2135 grade oil should be used. Oils heavier than S.A.E. 20 should not be used. The capacity of the crankcase is one pint.

The fuel tank is to be filled with clean gasoline, high test preferred. The engine will operate satisfactorily on gasolines having an octane rating from 68 to 100, either leaded or unleaded. Use a clean container and funnel for filling. The fuel tank air vent should be unscrewed from the top of the tank and replaced in the vertical or open position. Make sure the air cleaner on the carburetor is in place and free of all moisture-proof packing material.

Open fuel line valve at bottom of fuel tank and remove plug in breather pipe on crankcase and the engine is ready to start.





Place ignition switch, located on flywheel housing, in the ON position and close the carburetor choke located on lower portion of carburetor above the air filter. Wrap the starter rope around the grooved pulley on the engine in a clockwise direction. Steady the engine with the left hand and exert a quick pull on the rope to spin the engine. If the engine fires, open choke valve at once unless the surrounding temperature is very low when the choke may be left partially closed to permit engine to warm up.

If the engine does not start, open choke valve and repeat rope pull operation until the engine starts. Should the engine fail to start after several attempts with the choke open, the above operation should be repeated, closing the choke for one pull of the starter rope and opening the choke for several pulls. Do not attempt to adjust needle valve on carburetor during the starting operation as this adjustment has been made at the factory.

The engine should start after a few pulls on the starter rope and failure to do so after a reasonable number of trials indicates some fault in the preparations or damage to the engine. Reviewing section 7 covering engine faults will assist in locating the trouble.

After the engine has started allow it to warm up for five minutes before placing a load on the generator, after which the operation of the radio equipment may be checked.

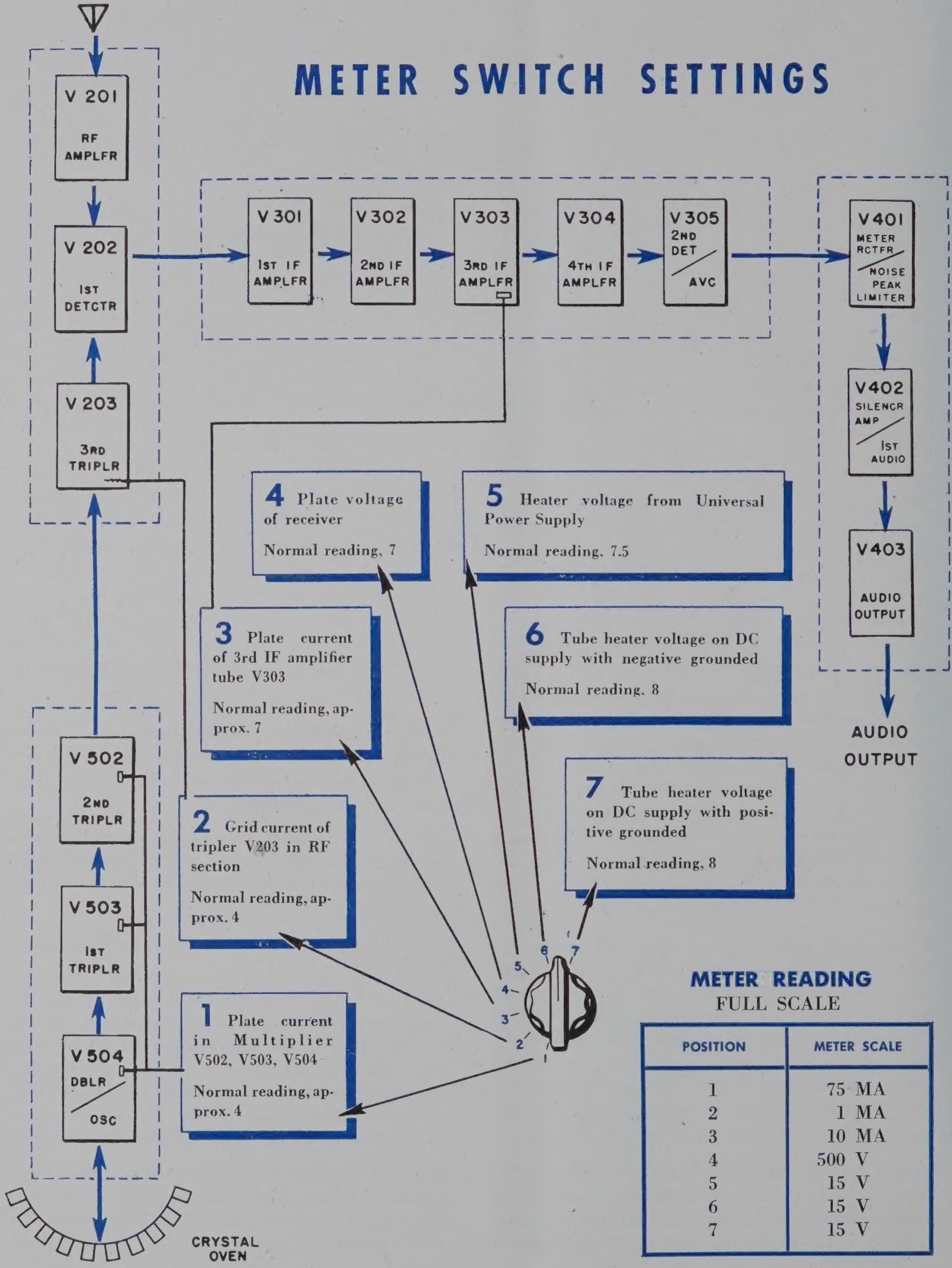
In sub zero weather special precautions must be taken or poor operation of the engine will result which may cause damage to the engine or complete failure.

Winter type high vapor pressure gasoline must be used in the fuel tank.

Oil that flows freely at —40 degrees F. must be used to prevent damage to the engine while warming up. In case low temperature oil is not available, No. 10W oil may be diluted with wax free kerosene in a proportion roughly equal to the temperature. Thus at —30 degrees F. add 30% kerosene and at —40 degrees F. add 40% kerosene.

If possible, warm the engine with a blow torch before starting, which assures proper lubrication immediately, and protect it from direct air blast while warming up or if operating on light load.

METER SWITCH SETTINGS


V 201
RF AMPLFR
V 202
1st DETCTR
V 203
3rd TRIPLR
V 301
1st IF AMPLFR
V 302
2nd IF AMPLFR
V 303
3rd IF AMPLFR
V 304
4th IF AMPLFR
V 305
2nd DET
AVC
V401
METER RCTFR
NOISE PEAK LIMITER
V402
SILENCR AMP
1st AUDIO
V403
AUDIO OUTPUT
AUDIO OUTPUT
V 502
2nd TRIPLR
V 503
1st TRIPLR
V 504
DBLR
OSC
CRYSTAL OVEN
1
2
3
4
5
6
7

1 Plate current in Multiplier V502, V503, V504

Normal reading, approx. 4

2 Grid current of tripler V203 in RF section

Normal reading, approx. 4

3 Plate current of 3rd IF amplifier tube V303

Normal reading, approx. 7

4 Plate voltage of receiver

Normal reading, 7

5 Heater voltage from Universal Power Supply

Normal reading, 7.5

6 Tube heater voltage on DC supply with negative grounded

Normal reading, 8

7 Tube heater voltage on DC supply with positive grounded

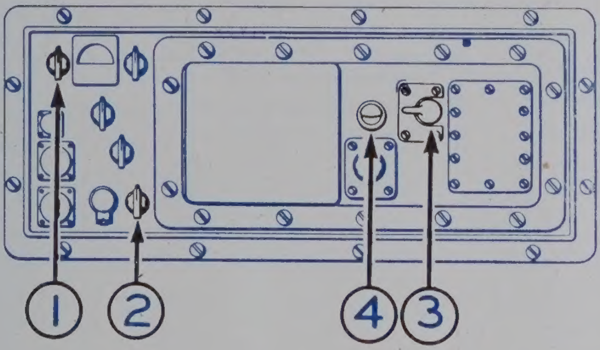
Normal reading, 8

METER READING
FULL SCALE

POSITION	METER SCALE
1	75 MA
2	1 MA
3	10 MA
4	500 V
5	15 V
6	15 V
7	15 V

CHECKING THE RECEIVER

The receiver is shipped with the tuning selectors adjusted to signal frequencies as determined by the characteristics of the crystals in the crystal oven. All tubes are in place and after the receiver is installed and connections made it should be ready for operation.



To check the receiver, place the Output Level (1) on O and Silencer switch (2) on OFF. The power switch (3) may then be turned to the proper position to switch the equipment on, down to the Dyn. position when 13V direct current is used as power supply or up to the PU position when the equipment is using the power unit. Make sure the MAR Power switch is in the ON position if this equipment is being used with the RDR. The panel light (4) should glow. Rotate cap on top of light shield to make sure the light aperture is opened. It is important that this light be on; should it be defective it will unbalance the heater circuit voltages.

Allow the tubes to heat for a few minutes, then check the heater voltage by means of the meter on the panel. Place the meter selector switch on position 6 when 13V direct current is being used with the negative grounded. A meter reading of 8 should result. Should a higher or lower reading be obtained, check voltage of power supply.

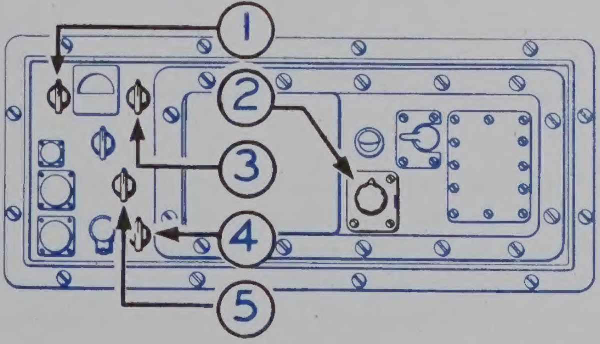
Where the positive side of the direct current supply is grounded it will be necessary to use position 7 of the meter switch to obtain a meter reading.

When the power unit is used as power source, meter readings to check the heater voltage are taken on position 5 of the meter switch.

The high voltage supply to the tube plates is then checked by placing meter switch on position 4 which should give a reading of 7.5.

Insert headset and extension cord into the phone jack on the panel and turn the Output Level control to the right to bring up the background noise. Should the background noise not be heard, it is reasonably certain that a tube has been damaged and should be replaced.

Having turned up the Output Level control (1) and obtained background noise, check the operation of the automatic tuning mechanism by rotating the channel selector switch (2) to each channel in turn, endeavoring to pick up signals. When signals are received, they may be sharply tuned in with the Antenna compensator knob (3) on the panel. The Silencer switch (4) can be moved to ON and the Silencer control (5) gradually turned to the right to reduce the background noise. With signals of sufficient intensity the background noise may be removed entirely during no signal periods. However, the Silencer control should not be set so high as to cut off the weakest signals to be received.

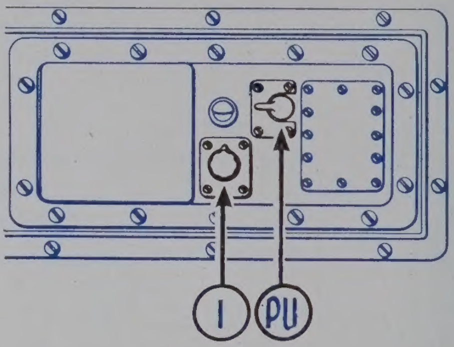


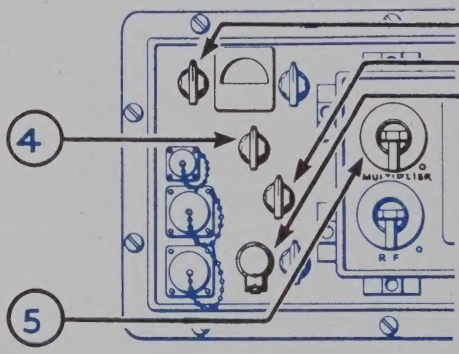
Should it be impossible to pick up signals or background noise, and tubes are known to be in operating condition, it may be necessary to retune the receiver.

ADJUSTING THE RECEIVER

The receiver is tuned and adjusted after assembly, and the equipment is shipped ready for operation with tubes and crystal oven in place. The following instructions will only apply should the settings of the selector dials become disturbed due to replacement of parts or change of crystal oven.

With the receiver connected to power supply and antenna, rotate the channel selector switch to position I and switch power on the receiver. Proceed to remove the panel covering the selector dials and crystal oven by loosening the screws around the edge of the panel. As the panel is removed it will be noted the knobs and panel light reflector remain on the panel. Mechanical coupling devices between the knobs and their respective controlled units make it unnecessary to dismount the knobs from their shafts when removing the panel. The selector dials are in position for adjustment to the first channel frequency.





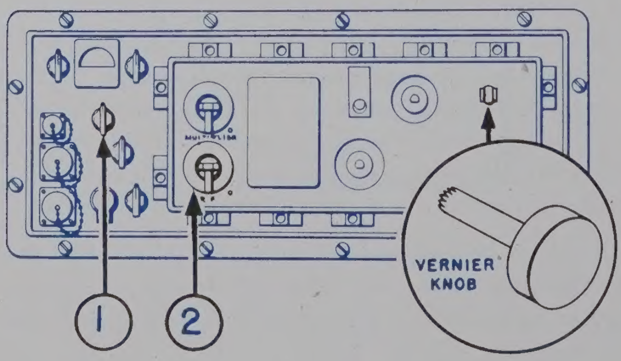
SET:

1. Output level at 5 or 6
2. Silencer level at 0
3. Plug headset into jack on panel

TUNING SEQUENCE

4. Rotate meter switch to position 1.
5. Unlock the Multiplier dial by swinging lever on dial until it stands straight out from dial knob. Insert vernier knob into hole adjacent to dial and rotate the dial slowly until a reading of 5 to 7 is obtained on the panel meter. Leave the dial at this setting but do not lock.

Rotate meter switch to position 2 to check grid excitation on the last tripler of the heterodyning frequency multiplying stages. Readjust the setting of the multiplier dial slightly to obtain a maximum reading of not less than 4.1 on the meter. Then depress the lever to lock the dial without disturbing the setting.



The meter selector switch (1) is now moved to position 3 and the locking lever on the R-F selector dial (2) raised.

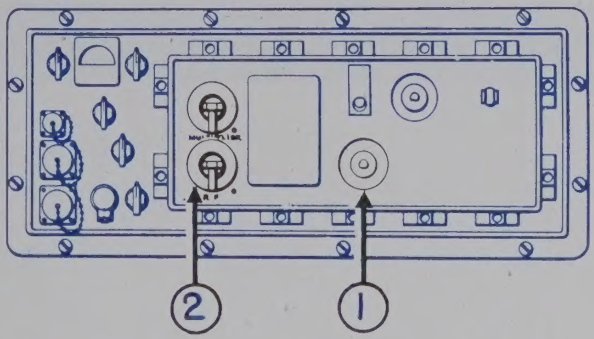
The R-F dial is slowly rotated by means of the vernier knob and as the correct setting is approached there should be a marked increase in the background noise in the headset and a decrease in the meter reading. When maximum background noise is heard, readjusting Output level if necessary for comfort, and minimum meter reading obtained, lock the dial by depressing lever. Do not disturb dial setting while locking.

The receiver is now tuned to the first channel frequency. It is necessary to follow the same tuning sequence for each of the ten channel frequencies available to the receiver.

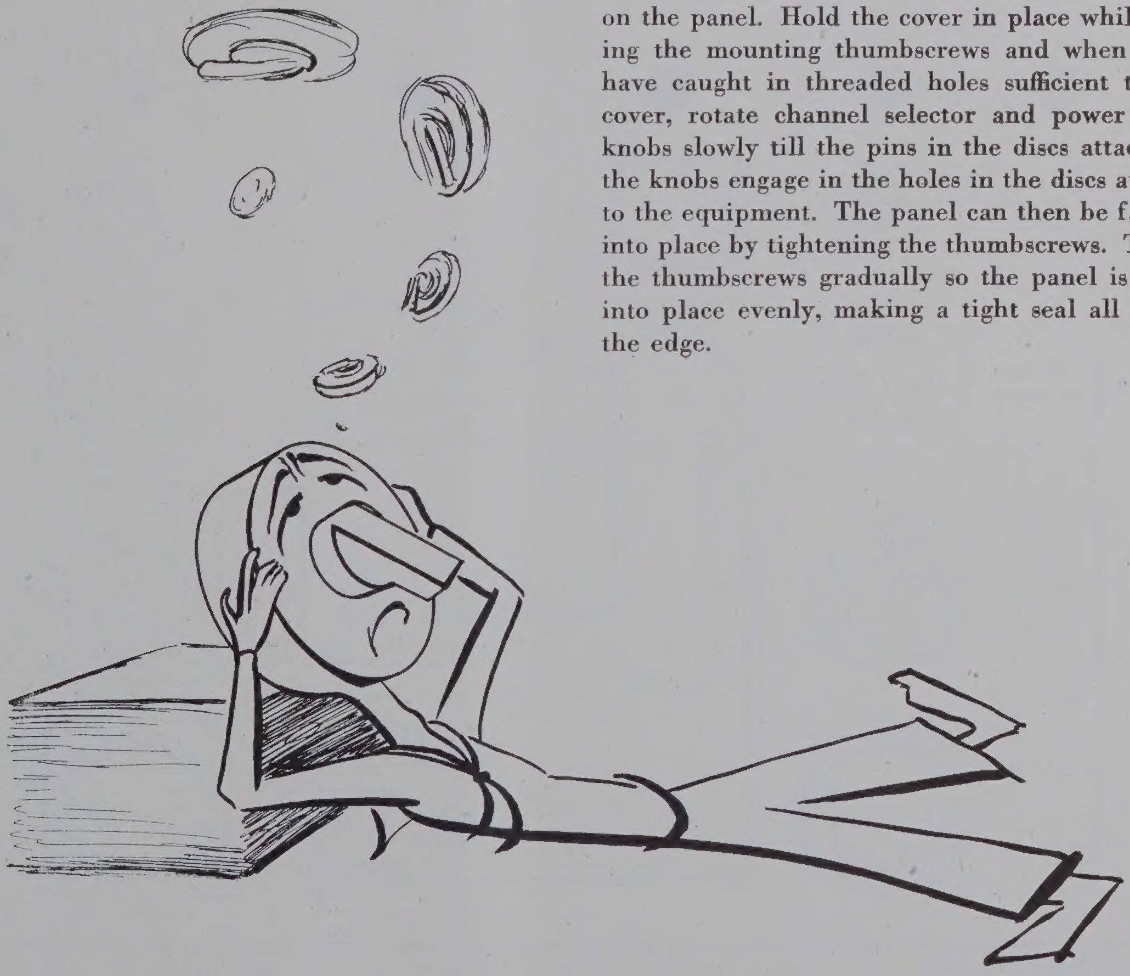
To set the receiver for the next channel frequency rotate the channel selector switch (1) to the next position by means of the flat flange on the panel connected to this switch. The two selector dials (2) will then rotate to a new position for adjustment to the second channel frequency.

The same tuning sequence is again followed step by step in making the adjustments for this second channel frequency as given with the first channel frequency settings.

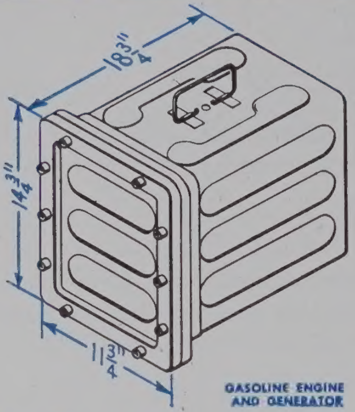
By repeating the procedure, the entire ten channels are tuned. The operation of the tuning mechanism should be checked by picking up a signal on one frequency channel, switching to another frequency to cut it off and then switching back to the channel on which signal was received.



The cover, with soft rubber gasket in place, may now be replaced over the selector dials, making certain vernier knob has been returned to its clip on the panel. Hold the cover in place while starting the mounting thumbscrews and when screws have caught in threaded holes sufficient to hold cover, rotate channel selector and power switch knobs slowly till the pins in the discs attached to the knobs engage in the holes in the discs attached to the equipment. The panel can then be fastened into place by tightening the thumbscrews. Tighten the thumbscrews gradually so the panel is pulled into place evenly, making a tight seal all around the edge.

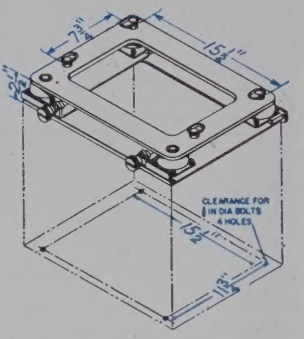


INSTALLATION REFERENCE DRAWINGS AND DATA


18 3/4"
14 3/4"
11 3/4"

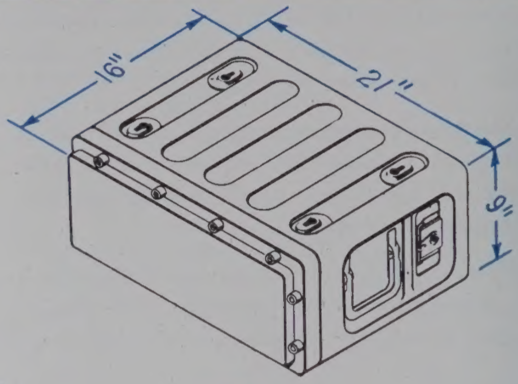
GASOLINE ENGINE AND GENERATOR

Navy Type
Reference


7 3/4"
15 5/8"
2 1/2"
CLEARANCE FOR 1/4 IN DIA BOLTS 4 HOLES
15 1/2"
11 3/4"

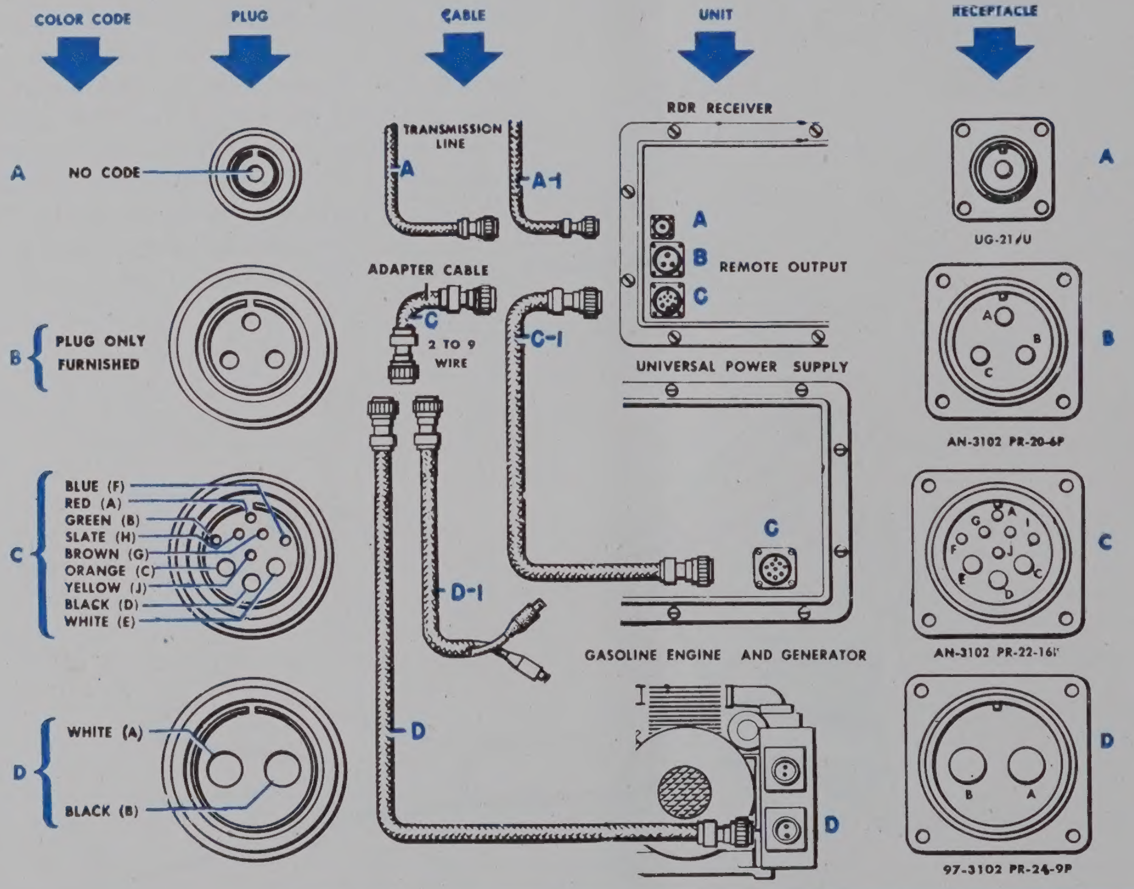
SHOCKMOUNT ASSEMBLY AND DRILLING PATTERN

CRV-10508
618913

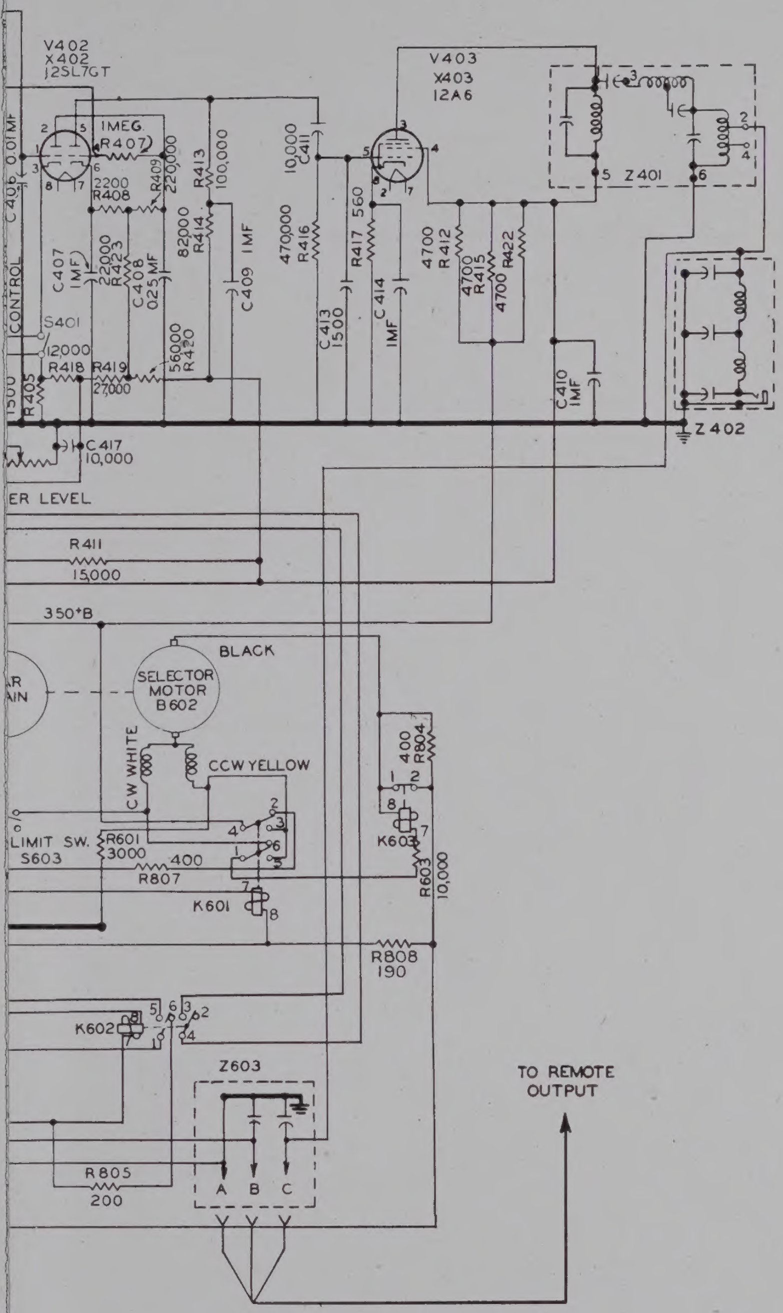


RECEIVER

CRV-46283
307498


COLOR CODE
PLUG
CABLE
UNIT
RECEPTACLE
A
NO CODE
TRANSMISSION LINE
A
A-1
RDR RECEIVER
A
B
C
REMOTE OUTPUT
A
UG-21/U
ADAPTER CABLE
C
2 TO 9 WIRE
C-1
B
PLUG ONLY FURNISHED
UNIVERSAL POWER SUPPLY
B
AN-3102 PR-20-6P
C
BLUE (F)
RED (A)
GREEN (B)
SLATE (H)
BROWN (G)
ORANGE (C)
YELLOW (J)
BLACK (D)
WHITE (E)
C
D-1
AN-3102 PR-22-16P
GASOLINE ENGINE AND GENERATOR
D
WHITE (A)
BLACK (B)
D
D
D
97-3102 PR-24-9P

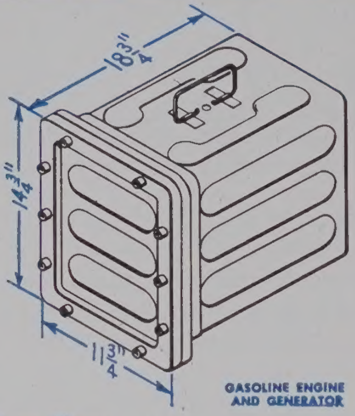
CABLE CHARACTERISTICS	A	A-1	B	C	C-1	D	D-1
Navy type	RG 8/u	RG 8/u	*	62223	62225	622251	62223
Mfg's Reference	722281	722281	*	728123	722625	722627	722658
Length	10 ft.	50 ft.	*	10 ins.	8 ft.	25 ft.	5 ft.
Conductors	2	2	*	2 to 9	9	2	2
Furnished	Complete	Complete	Plug only	Complete	Complete	Complete	Complete


V402
X402
12SL7GT
C406 0.01MF
CONTROL
1MEG.
R407
R409
220,000
2200
R408
R413
100,000
C407
1MF
22,000
R423
C408
.025MF
82000
R414
C409 1MF
56000
R420
S401
12000
R418
R419
27,000
1500
R405
C417
10,000
10,000
C411
470,000
R416
R417 560
C413
1500
C414
1MF
V403
X403
12A6
4700
R412
4700
R415
4700
R422
C410
1MF
Z401
Z402
ER LEVEL
R411
15,000
350+B
BLACK
SELECTOR
MOTOR
B602
CW WHITE
CCW YELLOW
LIMIT SW.
S603
R601
3000
400
R807
K601
400
R804
K603
R603
10,000
R808
190
K602
Z603
A
B
C
R805
200
TO REMOTE
OUTPUT

CABLING DIAGRAM

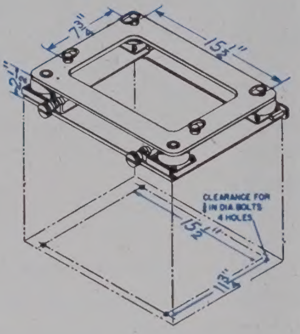
ith MAR Universal Power Supply

INSTALLATION REFERENCE DRAWINGS AND DATA


18 3/4"
14 3/4"
11 3/4"

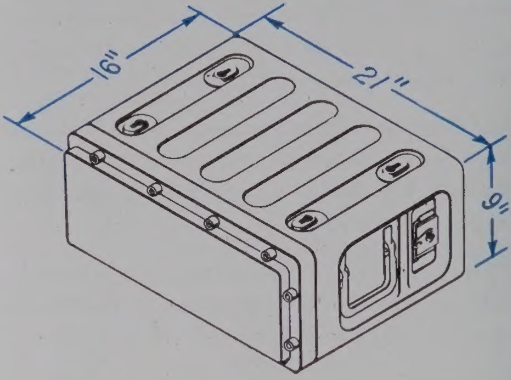
GASOLINE ENGINE AND GENERATOR

Navy Type
Reference


7 3/4"
15 1/2"
2 1/2"
CLEARANCE FOR 1/4 IN DIA BOLTS 4 HOLES
15 1/2"
11 3/4"

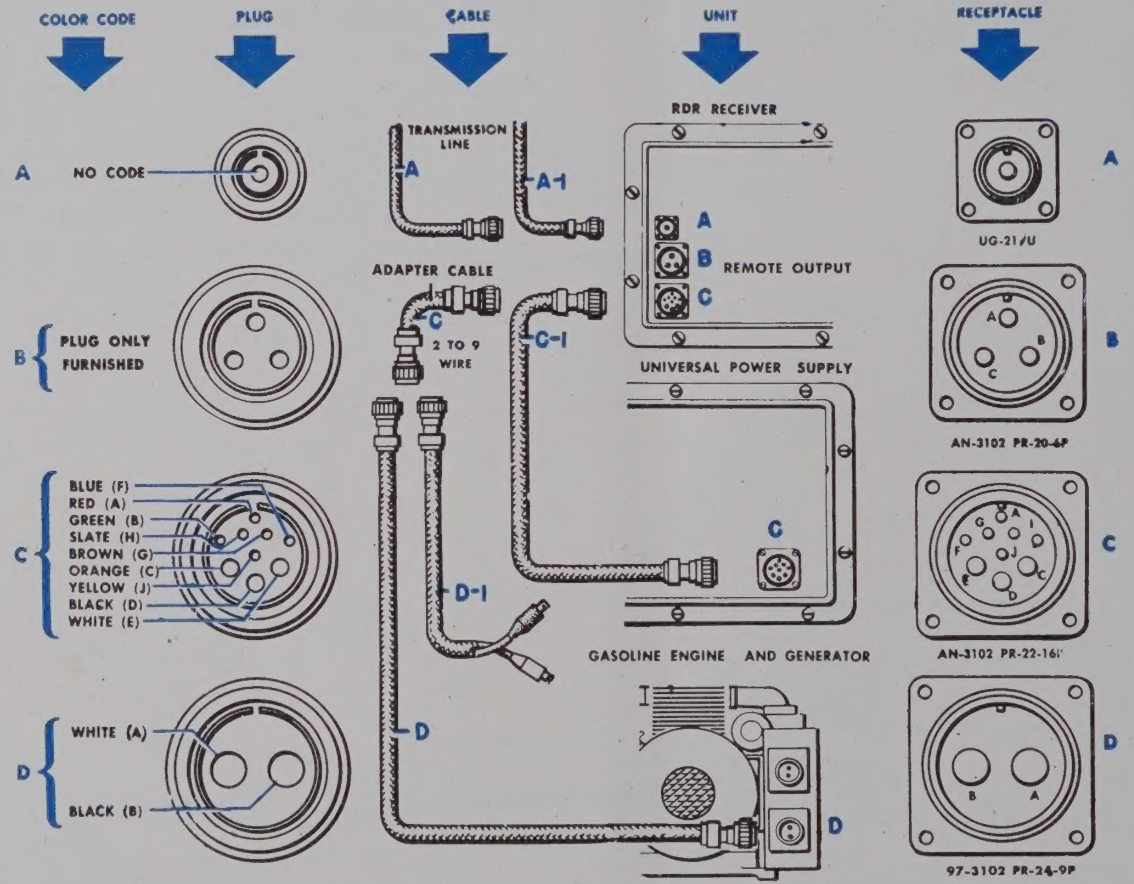
SHOCKMOUNT ASSEMBLY AND DRILLING PATTERN

CRV-10508
618913



RECEIVER

CRV-46283
307498


COLOR CODE
PLUG
CABLE
UNIT
RECEPTACLE
A
NO CODE
B
PLUG ONLY FURNISHED
C
BLUE (F)
RED (A)
GREEN (B)
SLATE (H)
BROWN (G)
ORANGE (C)
YELLOW (J)
BLACK (D)
WHITE (E)
D
WHITE (A)
BLACK (B)
TRANSMISSION LINE
A
A-1
ADAPTER CABLE
C
2 TO 9 WIRE
C-1
D-1
D
RDR RECEIVER
A
B
C
REMOTE OUTPUT
UNIVERSAL POWER SUPPLY
C
GASOLINE ENGINE AND GENERATOR
D
A
UG-21/U
A
B
C
B
AN-3102 PR-20-6P
A
G
I
F
J
E
C
D
C
AN-3102 PR-22-16P
B
A
D
97-3102 PR-24-9P

CABLE CHARACTERISTICS	A	A-1	B	C	C-1	D	D-1
Navy type	RG 8/u	RG 8/u	*	62223	62225	622251	62223
Mfg's Reference	722281	722281	*	728123	722625	722627	722658
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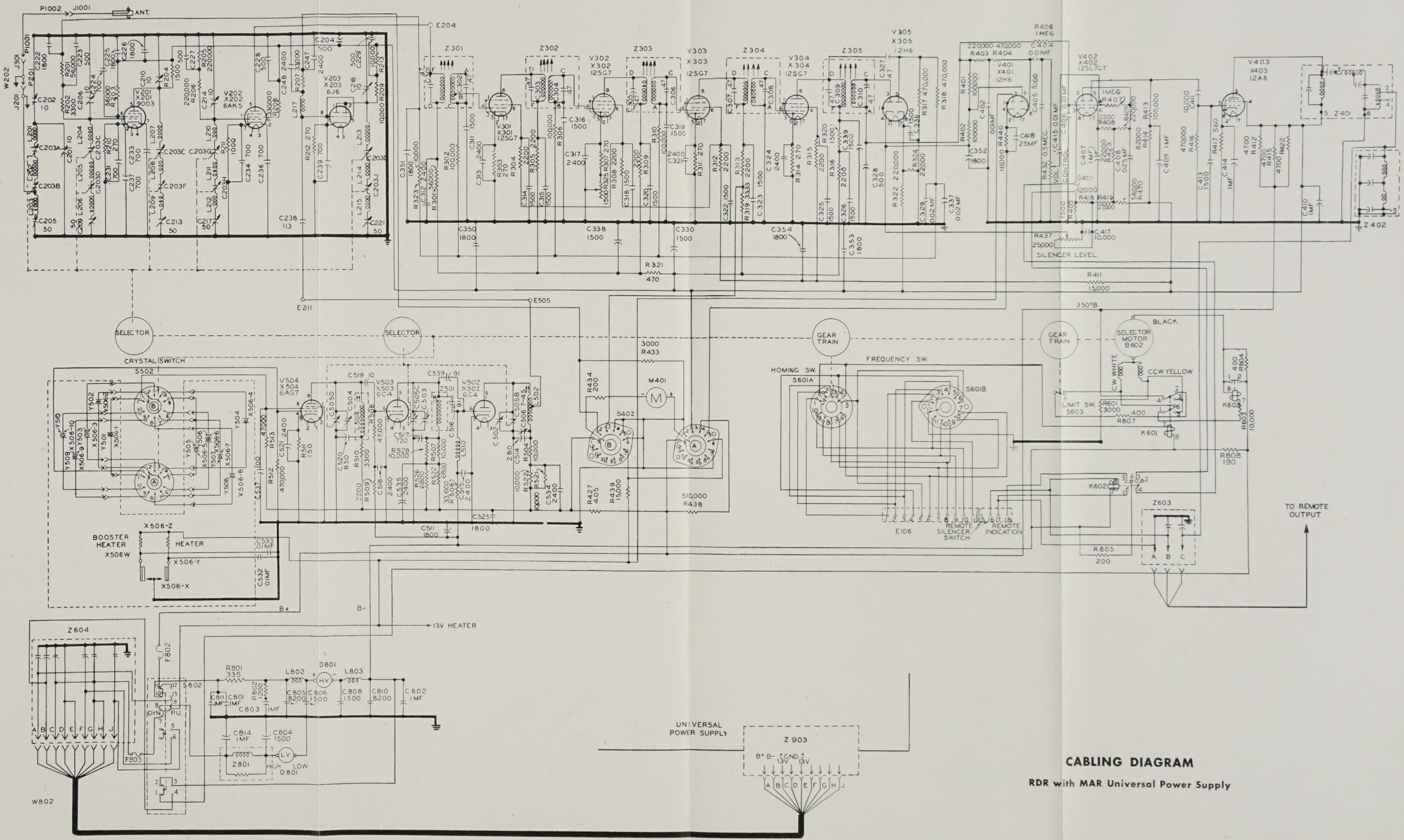
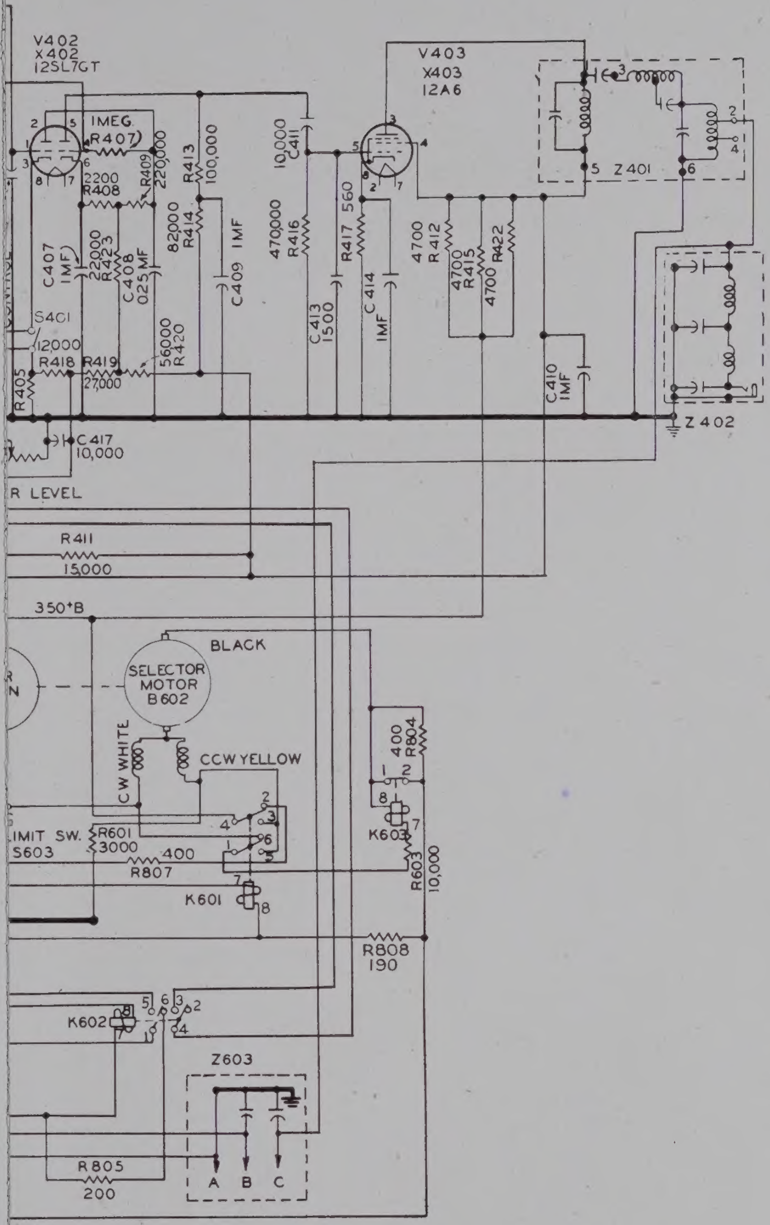
Conductors	2	2	*	2 to 9	9	2	2
Furnished	Complete	Complete	Plug only	Complete	Complete	Complete	Complete


P1002
J1001
ANT.
E204
W202
J301
P1001
P201
J201
V201
X201
9003
V202
X202
6AK5
V203
X203
6J6
Z301
Z302
Z303
Z304
Z305
V301
X301
12SG7
V302
X302
12SG7
V303
X303
12SG7
V304
X304
12SG7
V305
X305
12H6
V401
X401
12H6
V402
X402
12SL7GT
V403
X403
12A6
Z401
Z402
VOL. CONTROL
SILENCER LEVEL
E211
E505
SELECTOR
CRYSTAL SWITCH
S502
SELECTOR
V504
X504
6AG7
V503
X503
6C4
V502
X502
6C4
M401
S402
GEAR TRAIN
GEAR TRAIN
SELECTOR MOTOR B602
BLACK
350+B
FREQUENCY SW.
HOMING SW.
S601A
S601B
CW WHITE
CCW YELLOW
LIMIT SW. S603
K601
K602
K603
Z603
E106
REMOTE SILENCER SWITCH
REMOTE INDICATION
TO REMOTE OUTPUT
BOOSTER HEATER
HEATER
X506W
X506-Z
X506-Y
X506-X
B+
B-
13V HEATER
Z604
S802
F802
F803
DYN.
P.U.
D801
H.V.
L.V.
Z801
HIGH
LOW
W802
UNIVERSAL POWER SUPPLY
Z903
B+ B- GND 13V 13V
A B C D E F G H J

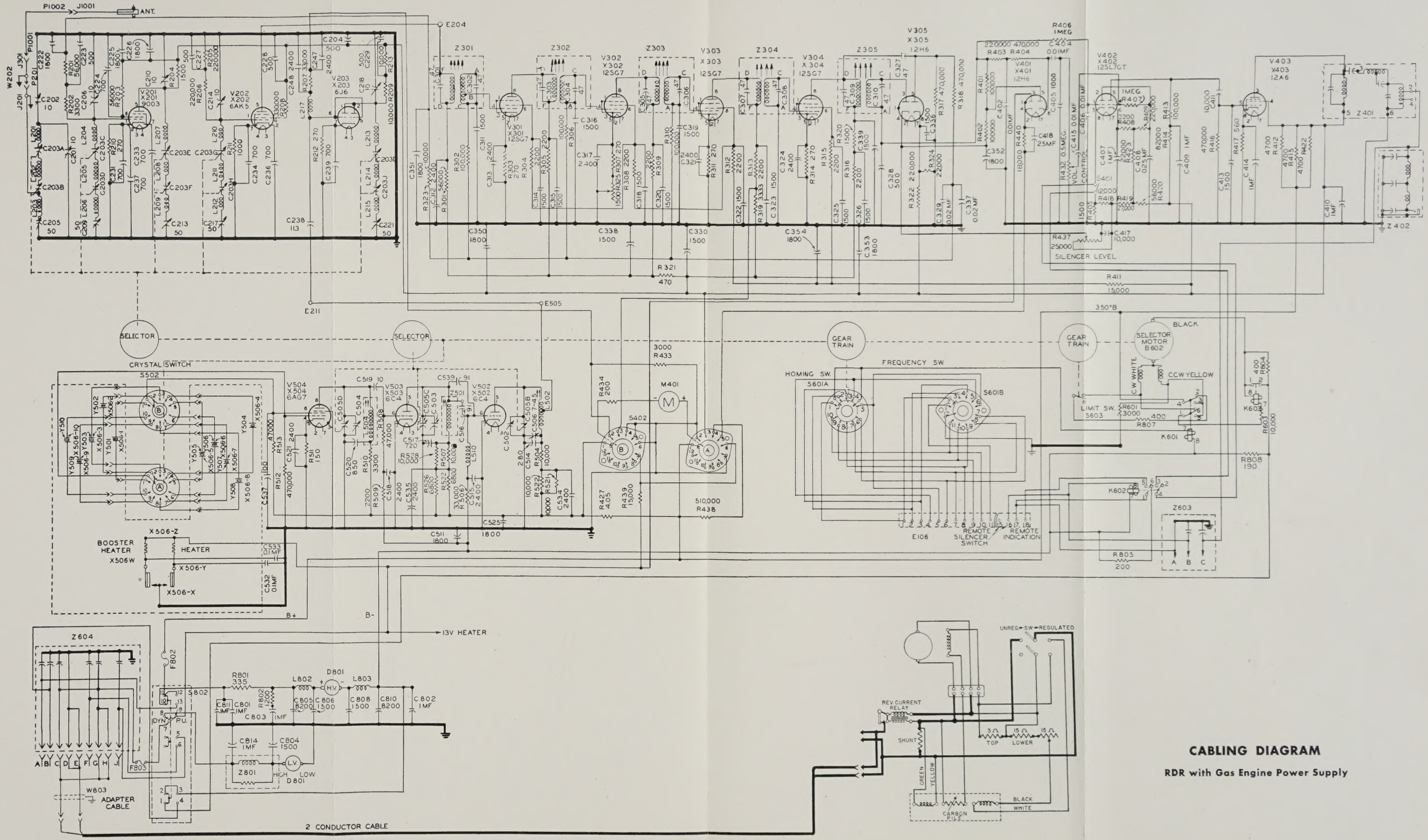
CABLING DIAGRAM

RDR with MAR Universal Power Supply


V402
X402
12SL7GT
IMEG
R407
2200
R408
R409
220,000
R413
100,000
10,000
C411
V403
X403
12A6
Z401
C407
IMF
2,000
R423
C408
.025 MF
82000
R414
C409 IMF
470,000
R416
R417 560
C413
1500
C414
IMF
4700
R412
4700
R415
4700
R422
C410
IMF
S401
12000
R418
R419
27,000
56000
R420
R405
C417
10,000
Z402
R LEVEL
R411
15,000
350+B
BLACK
SELECTOR
MOTOR
B602
CW WHITE
CCW YELLOW
400
R804
K603
R603
10,000
LIMIT SW.
S603
R601
3000
400
R807
K601
R808
190
K602
Z603
A
B
C
R805
200

CABLING DIAGRAM

RDR with Gas Engine Power Supply


P1002
J1001
ANT.
P1001
J301
P201
W202
J201
E204
E211
E505
Z301
Z302
Z303
Z304
Z305
V302 Y302 12SG7
V301 X301 12SG7
V303 X303 12SG7
V304 X304 12SG7
V305 X305 12H6
V401 X401 12H6
V402 X402 12SL7GT
V403 X403 12A6
V201 X201 9003
V202 X202 6AK5
V203 X203 6J6
R406 1MEG
Z401
Z402
SILENCER LEVEL
R411 15,000
R321 470
350°B
SELECTOR
CRYSTAL SWITCH
S502
GEAR TRAIN
SELECTOR MOTOR B602
BLACK
CCW YELLOW
CW WHITE
FREQUENCY SW.
HOMING SW.
S601A
S601B
LIMIT SW. S603
K601
K602
K603
Z603
A B C
V504 X504 6AG7
V503 X503 6C4
V502 X502 6C4
M401
S402
R433 3000
R438 510,000
E106
REMOTE SILENCER SWITCH
REMOTE INDICATION
BOOSTER HEATER X506W
HEATER
X506-Z
X506-Y
X506-X
B+
B-
13V HEATER
Z604
F802
S802
R801 335
L802
D801
L803
H.V.
L.V.
HIGH
LOW
Z801
F803
W803
ADAPTER CABLE
A B C D E F G H J
2 CONDUCTOR CABLE
UNREG SW REGULATED
REV. CURRENT RELAY
SHUNT
GREEN
YELLOW
BLACK
WHITE
CARBON PILE
3Ω TOP
15Ω LOWER
15Ω

CABLING DIAGRAM

RDR with Gas Engine Power Supply

NAVSHIPS 900,841

OPERATION

SECTION 4

NAVY MODEL

RDR

RADIO RECEIVING EQUIPMENT

RESTRICTED

TABLE OF CONTENTS

OPERATION

SECTION 4

PAGE

Typical Operational Setups 4-2

Operation of RDR Receiver 4-3

Receiver Panel Controls 4-4

Selector Panel Fittings 4-4

Operating Procedure 4-5

Operator's Don'ts 4-6

WARNING

The RDR equipment employs voltages which are dangerous to operating personnel and may cause fatalities if safety regulations are not strictly obeyed.

Don't Touch Live Circuits—Remove all source of power before changing tubes or making adjustments inside the equipment. Capacitors may retain dangerous charges after power is off, so discharge and ground circuits prior to touching them.

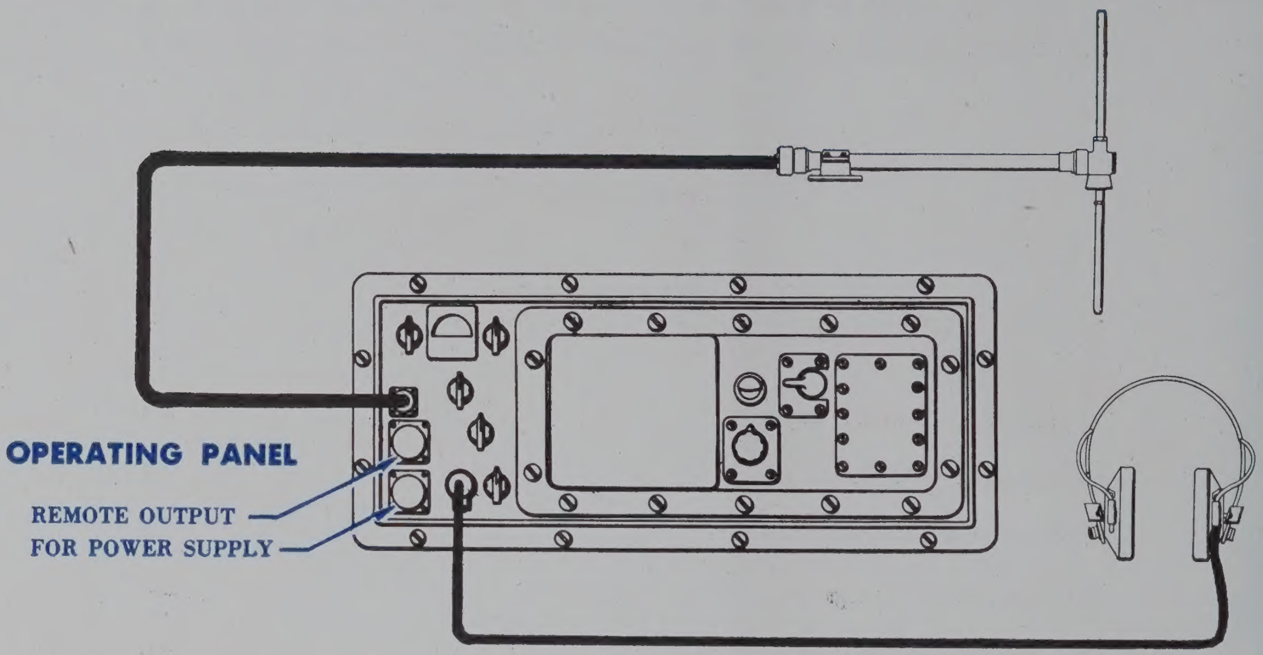
Don't Service or Adjust Alone—Check resistance and continuity rather than voltage whenever possible.

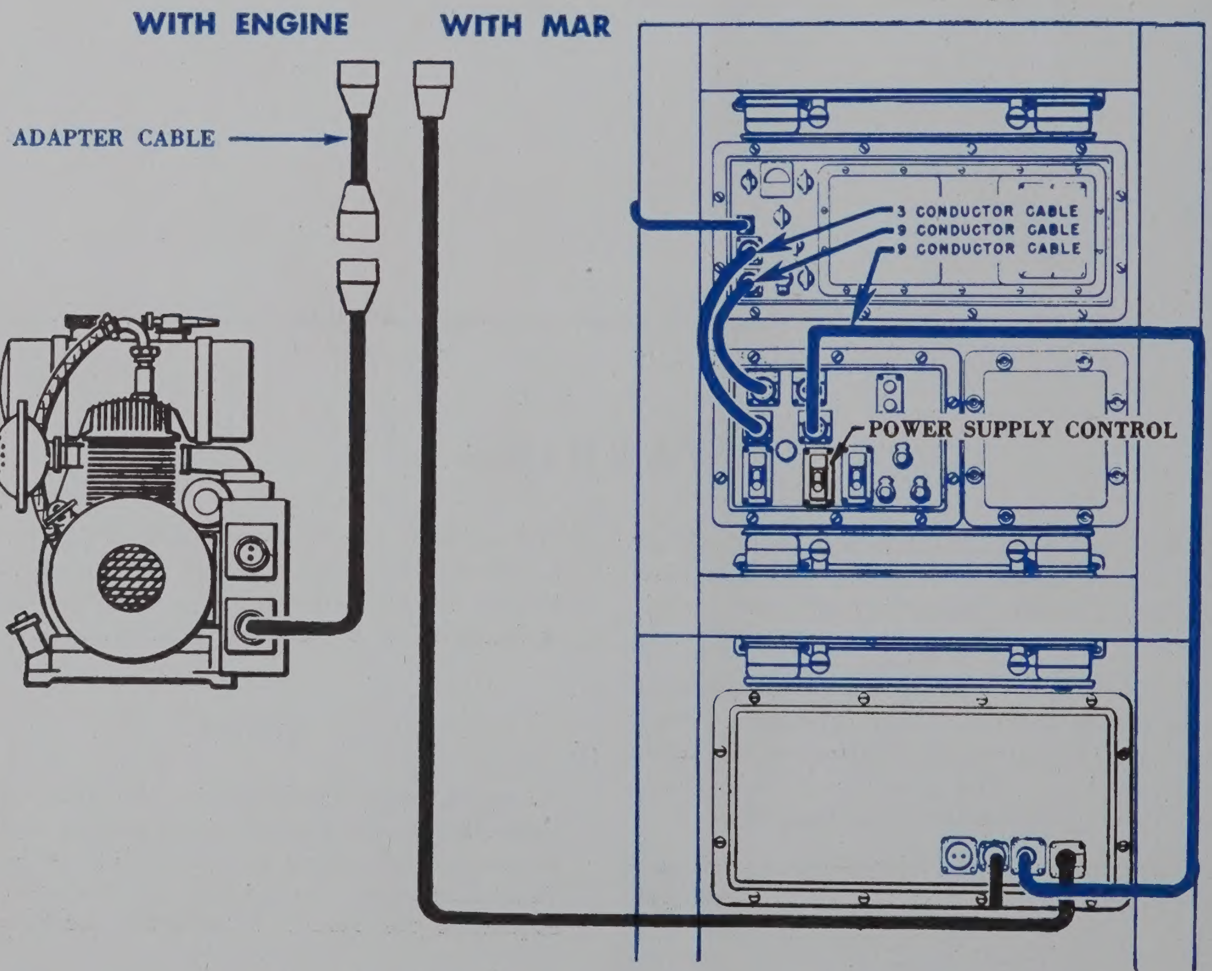
The attention of officers and operating personnel is directed to Chapter 67 of Bureau of Ships Manual or superseding instructions on the subject of Radio-Safety precautions to be observed.

NOTICE

An approved poster illustrating the rules for resuscitation by the prone-pressure method shall be prominently displayed in each Radio, Radar, or Sonar Enclosure. Posters may be obtained upon request to the Bureau of Medicine and Surgery.

TYPICAL OPERATIONAL SETUPS


OPERATING PANEL
REMOTE OUTPUT
FOR POWER SUPPLY


WITH ENGINE
WITH MAR
ADAPTER CABLE
3 CONDUCTOR CABLE
9 CONDUCTOR CABLE
9 CONDUCTOR CABLE
POWER SUPPLY CONTROL

OPERATION OF RDR RECEIVER

The operation of the RDR receiver is similar in most respects to the procedure followed in handling the MAR equipment during reception. Lacking many of the complications presented by the involved switching system in the MAR, its operation requires a minimum of adjustments on the part of the operator.

Since the receiver is tuned by a preset selector system controlled by a rotary switch, the selection of operating frequency requires only that the switch be rotated to the desired channel position. The rest of the operating procedure is then a matter of adjusting the volume of output and degree of silencing action to suit conditions.

The method of starting the equipment will vary slightly according to the type of installation and the source of power used. Thus, in a permanent installation where the receiver is used with MAR equipment powered by a universal power unit operating from power mains, starting the equipment requires only the switching on of power to the receiver. Such an installation is shown in the illustration where the controls for the RDR are indicated in black.

With the equipment connected as shown, it is necessary to switch on the MAR before operating the RDR receiver. The control circuit that operates the input current relay of the power supply unit is connected to the receptacle into which the MAR power cable is plugged. After switching on the MAR, the power switch on the panel of the RDR can be moved to the PU position to switch on the RDR.

Should it be necessary to operate the RDR from the power supply unit without the MAR, the power supply cable to the RDR must be plugged into the receptacle on the power unit to which the MAR cable is usually connected. With this arrangement the switch on the RDR receiver will then control the power supply unit.

Starting the RDR receiver when the source of power is 13V direct current from the gas engine driven generator becomes more complicated since it involves starting of the generator unit before power is available.

Before starting engine, check oil level by means of plug gauge on side of engine crankcase and add oil of proper grade (S.A.E. 20) if necessary to bring it up to the full point. Check fuel tank and fill if necessary. Make sure that fuel valve under tank is open, that switch on control box is in RADIO position. Place ignition switch, on flywheel housing, in ON position and close choke on carburetor air intake.

Wrap starter rope around grooved pulley on end of engine housing and while steadying engine with left hand or foot exert a quick pull on the rope. If engine starts, open choke valve.

If engine does not start, open choke valve and repeat spinning of engine with rope until it starts. Should engine fail to start after several attempts, prime it again by closing choke for one pull of the starter rope and opening it for several trials.

After the engine has started, allow it to warm up for several minutes until it is running smoothly.

With the gas engine unit in operation, the RDR receiver may then be switched on by moving the power switch on the panel to the DYN position.

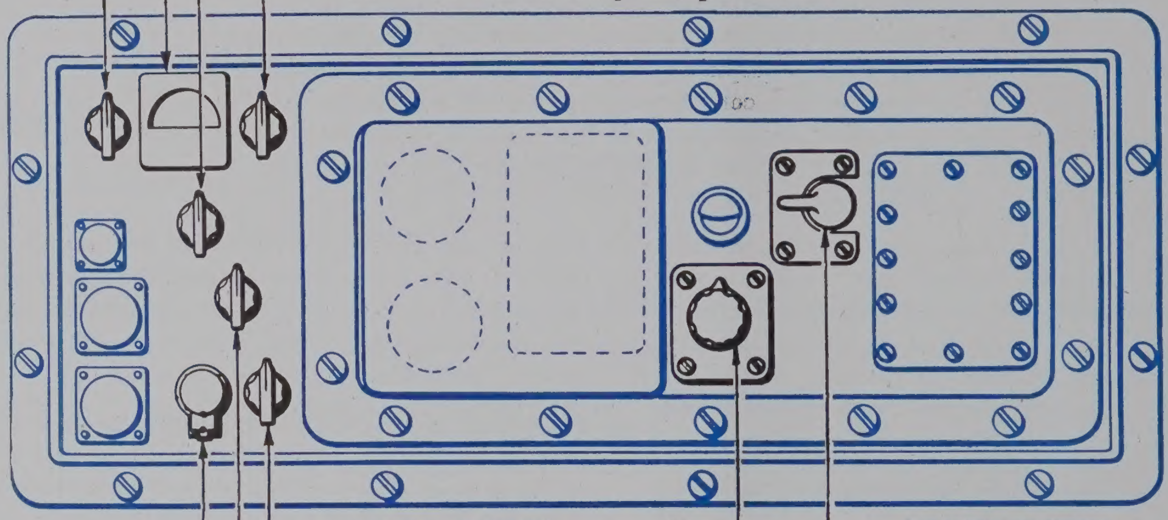
RECEIVER PANEL CONTROLS

OUTPUT LEVEL control to adjust audio output of Receiver.

METER to check voltages and currents in receiver circuits.

METER SELECTOR SWITCH to switch meter into proper circuits for checking.

ANTENNA COMPENSATOR to correct detuning due to antenna loading of input circuit.



SILENCER SWITCH to cut off silencer circuit.

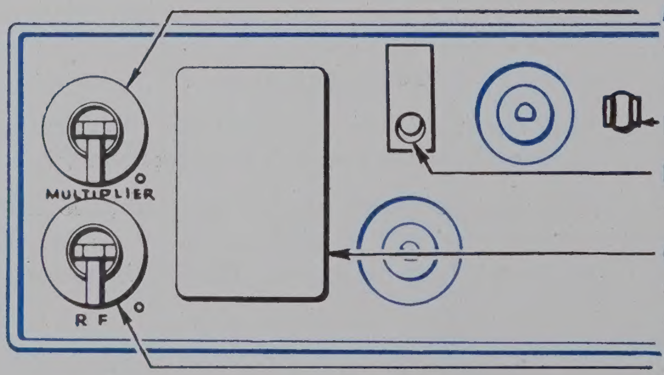
SILENCER LEVEL control to adjust level at which silencer operates.

PHONE JACK for plugging headset into receiver output circuit.

POWER SWITCH to switch on power to receiver.

CHANNEL SELECTOR SWITCH to select desired channel frequency.

SELECTOR PANEL FITTINGS



MULTIPLIER dial for pre-tuning ganged variable capacitors that tune the circuits of the frequency multiplier.

VERNIER DIAL SETTING KNOB

PANEL LIGHT to indicate power on and illuminate channel selector switch.

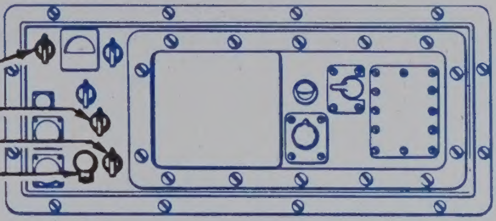
CRYSTAL OVEN which maintains practically constant crystal temperature for the ten channel frequency crystals.

R. F. dial to pre-tune circuits in radio frequency tuning section of receiver.

OPERATING PROCEDURE

PRELIMINARY ADJUSTMENTS

- Output Level at 0
- Silencer Level at 0
- Silencer Switch on OFF
- Plug headset into jack



SWITCH ON POWER TO RECEIVER

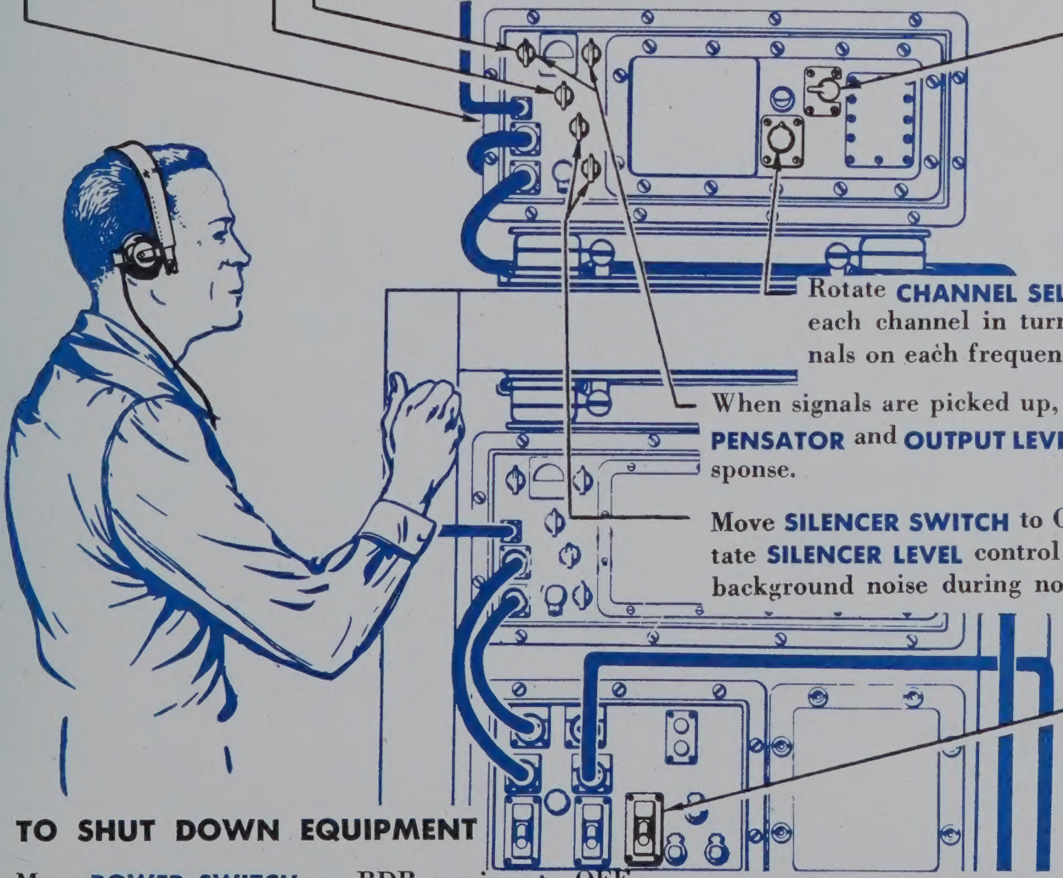
WITH MAR: MAR Power switch on PU
RDR Power switch on PU

WITH GAS ENGINE: Start engine as described
RDR Power switch on DYN

CHECK PLATE AND HEATER VOLTAGE

	WITH MAR		WITH 13V d-c	
Meter Switch on pos.	4	5	4	6 or 7
Plate Voltage reading	7.5		7.5	
Heater Voltage reading		8.5		8

Rotate **OUTPUT** level control to right until rushing or hissing sound is heard.



Rotate **CHANNEL SELECTOR SWITCH** to each channel in turn, listening for signals on each frequency.

When signals are picked up, adjust **ANT. COMPENSATOR** and **OUTPUT LEVEL** for best signal response.

Move **SILENCER SWITCH** to ON position and rotate **SILENCER LEVEL** control to right to cut out background noise during no signal periods.

TO SHUT DOWN EQUIPMENT

Move **POWER SWITCH** on RDR receiver to OFF position.

Return **SILENCER LEVEL CONTROL** to 0 and **SILENCER SWITCH** to OFF position to assure reception of weak signals when operation is resumed.

Shut down **GAS ENGINE GENERATOR,** if used, by means of switch on flywheel housing.

Move **POWER SWITCH** on MAR to OFF position unless this equipment is to continue in use.

OPERATOR'S DONT'S

DON'T leave Silencer switch at on or Silencer level at other than 0 when the receiver is switched off.

BECAUSE this may cause the loss of a weak signal when operation is resumed.

DON'T operate the receiver if the panel light does not light.

BECAUSE this lamp is in a filament heater branch and will unbalance the tube voltage if burnt out.

DON'T operate the equipment with heater voltages above normal.

BECAUSE the overvoltage will shorten tube life. Necessary adjustment can be made at rheostat on generator control box.

DON'T neglect gas engine lubrication.

BECAUSE rapid wearing of parts and early failure of the unit is certain to result if lubricating chart in Section 5 is not followed in detail.

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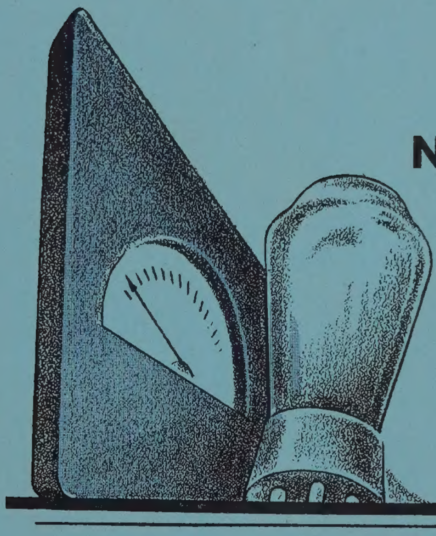
OPERATOR'S MAINTENANCE

SECTION 5



NAVY MODEL

RDR

RADIO RECEIVING EQUIPMENT

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SAFETY NOTICE

The RDR equipment employs voltages which are dangerous to operating personnel and may cause fatalities if safety regulations are not strictly obeyed.

Don't Touch Live Circuits—Remove all source of power before disconnecting cables or making adjustments inside the equipment. Capacitors may retain dangerous charges after power is off so discharge and ground circuits prior to touching them.

Check resistance and continuity rather than voltage whenever possible.

The attention of officers and operating personnel is directed to Chapter 67 of Bureau of Ships Manual or superseding instructions on the subject of Radio-Safety precautions to be observed.

NOTICE

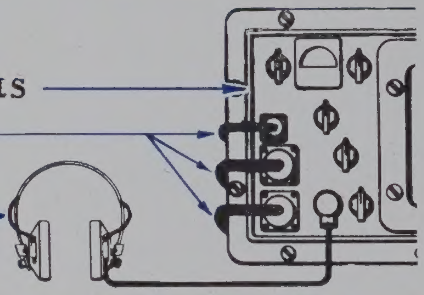
An approved poster illustrating the rules for resuscitation by the prone pressure method shall be prominently displayed in each Radio, Radar or Sonar Enclosure. Posters may be obtained upon request to the Bureau of Medicine and Surgery.

OPERATOR'S MAINTENANCE

In common with all electronic apparatus, the RDR radio equipment is subject to minor derangement and tube deterioration that can be located and corrected by the operator without requiring the services of a radio technician. Despite every precaution in manufacture, it is the attention and care given the equipment by the operator that determines the degree of satisfactory operation and the life of the equipment and accessories.

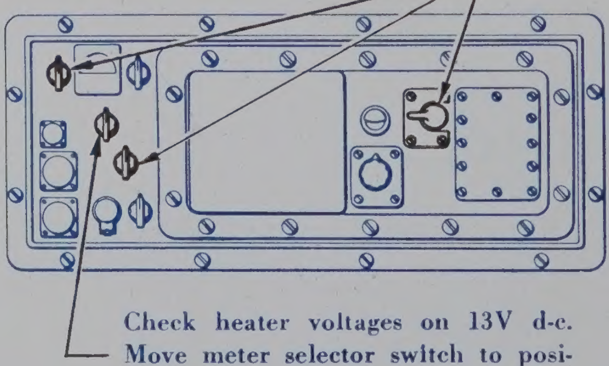
The operator should then be constantly alert for symptoms of minor defects that can become major difficulties if permitted to take their course. The adoption of a checking routine when taking over the equipment is recommended as the simplest and surest way of locating and correcting improper functioning to avoid equipment failures. The following routine check is recommended as a quick method of locating trouble before it becomes serious. The number in the last column of the chart indicates the page on which full details of causes and necessary corrections are given when the test indicates trouble requiring more information than given in the chart.

ROUTINE CHECK

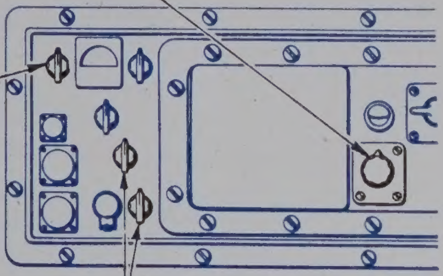


INSPECT:	FOR:
CONTROL PANELS	Broken or loose knobs or switches.
CABLES	Loose connectors, kinks or worn insulation.
HEADSET	Broken or loose parts, broken plugs, cords, or rubber guards cracked.

RECEIVER PANEL



WHAT TO CHECK	HOW TO CHECK
With Silencer and Output Level at 0, switch power onto the equipment.	Panel light should glow. On 13V d-c. Dynamotor can be heard operating by placing ear close to modulator-dynamotor panel. **NOTE** any unusual symptoms as excessive hum or noise in the equipment.
Check heater voltages on 13V d-c. Move meter selector switch to positions 6 or 7 depending on polarity of power supply.	Reading of 8 should be obtained on the meter.
On Universal power supply, position 5 is used for this check.	Reading of 7.5 should be obtained on the meter.
Check high voltage by placing meter switch on position 4.	Reading of 7.5 should be obtained on the meter.



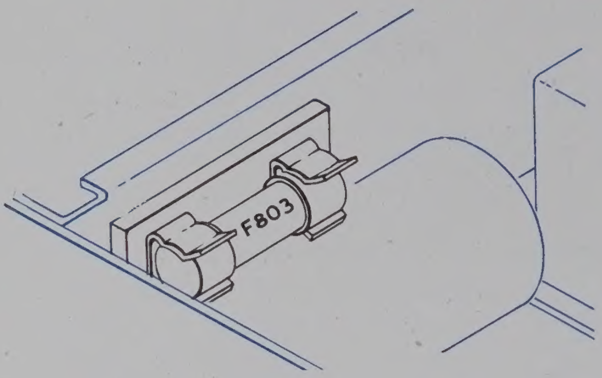
WHAT TO CHECK	HOW TO CHECK
Rotate Channel Selector switch to different position.	• Operation of selector mechanism can be checked by placing ear to panel. Any hesitancy or unusual sounds should be investigated.
Rotate Output Level control to right.	• Background noise should increase and can be brought up quite loud and several frequency channels may be checked in an effort to pick up signals.
Move Silencer switch to ON and rotate Silencer control to right.	• Background noise should be eliminated with no signals. Always keep Silencer control below point where it would cut off weak signals.

GAS ENGINE GENERATOR UNIT

The gas engine unit furnished with the receiver should be checked over daily to assure it is in operating condition. The following routine is recommended to locate defects and prevent failure of the equipment.

WHAT TO CHECK	HOW TO CHECK	REFER
Check gas engine, examining carefully for loose parts or fittings. Check fuel supply and oil level in engine. Examine air filter and muffler for any obstruction.	Tighten any loose bolts. Fill fuel tank. Add oil if necessary to bring up to proper level. Excessive use of oil should be noted as it indicates leaks in the crankcase or worn piston rings.	Sec. 6
Start engine and note operation under load.	Erratic operation may be due to leaks in the intake fittings or defective spark plug. Change plug if showing signs of burning or heavy carbon deposits.	Sec. 7
Check switch on control box.	Make certain switch is on Radio position for operation of radio receiver.	Sec. 6

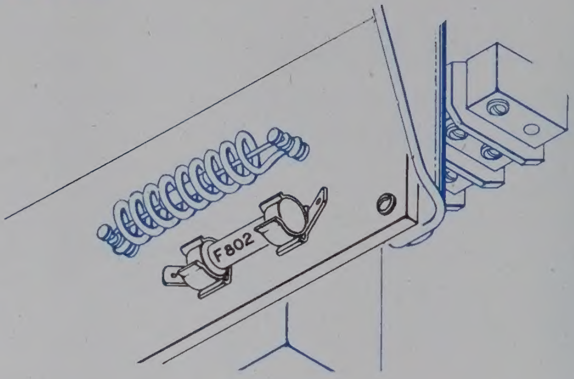
FUSE FAILURE



SYMPTOMS: On 13V. d-c panel light out.
Dynamotor not operating.
No meter reading on positions 5 and 6 of meter switch.

CAUSE: Low voltage fuse, F803 defective.

CORRECTION: Switch off power, loosen screws around panel of receiver and withdraw chassis, half way. Replace with 30A fuse from spares. Fuse is located in dynamotor section at left.



SYMPTOMS: Panel light on.
Dynamotor operating.
No meter reading with Meter switch on position 4.
Channel selector motor will not function.

CAUSE: High voltage fuse, F802, defective.

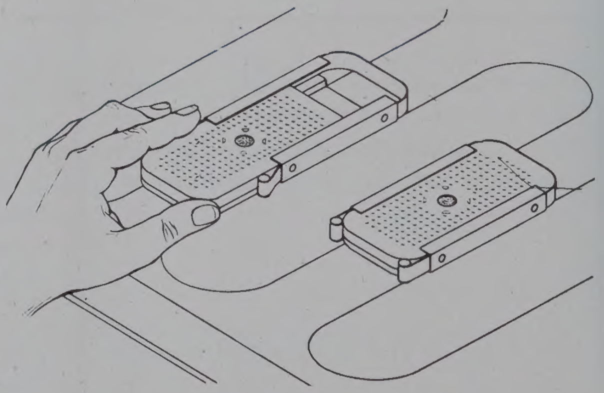
CORRECTION: Proceed as before, the fuse being located on the terminal board beneath the chassis. Replace with 1A fuse from spares. This fuse is located beneath the dynamotor section at the rear end of the left hand terminal board.

SILICA GEL DRYER UNIT

Whenever there is occasion to remove the chassis of the RDR radio equipment from the case it is advisable to check the dryer units clipped to the bottom of the cases. The case contains two units fitting into clips, and spare units in sealed packages are provided with the accessories.

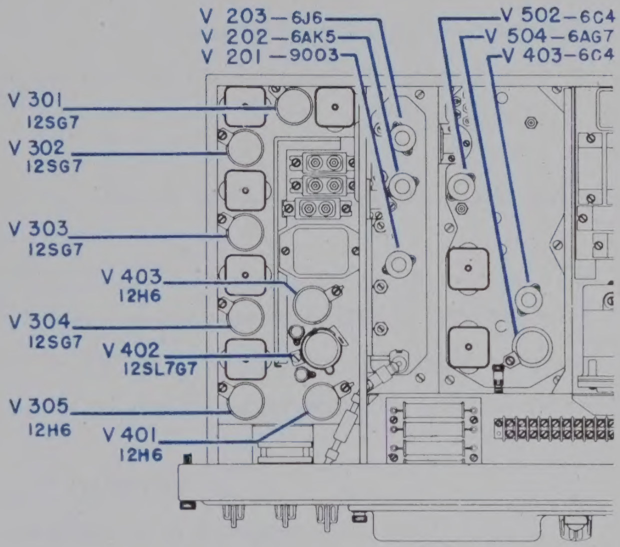
Remove the dryer cartridge from the clip and inspect the small mica window on one side of the unit. The contents of the cartridge will be visible and if of a light blue or grayish color, the unit is still effective and may be placed back in service.

Should the grains show a faint pink color it indicates they are saturated with moisture and the unit should be replaced. Remove one of the spare dryer cartridges from its container by pulling loose the sealing strip around the edge of the tin box enclosing the cartridge. Insert the fresh dryer cartridge into the clip in the bottom of the equipment case. Save the used cartridge and can.



The dryer cartridge can be reclaimed by heating in an oven at a temperature of 300° F. for a period of three hours. This will drive all the moisture from the silica gel granules and the cartridge can be placed in the can and the whole sealed with the tape around the edge for future use.

TUBE FAILURE

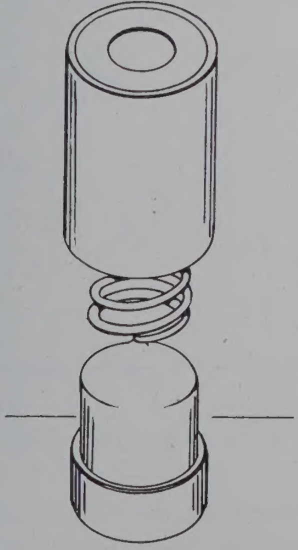


The most common cause of tube failure is the decrease of electronic emission from the cathode with prolonged use. This is usually accompanied by a gradual reduction in signal strength. To obtain maximum tube life it is necessary to hold the heater voltages at their rated values and avoid over-voltages that shorten the life of the tubes by causing abnormal cathode emission. Maintaining proper heater circuit voltage is an important factor in the proper operation of the equipment.

Normal loss of cathode emission is usually detected and corrected by the checking routine of preventive maintenance. Under some conditions, particularly from extreme shock, a tube may fail suddenly, either from opening of heater circuit or other mechanical disturbance of its elements. In such cases the illustration is a guide to locating the defective tube and making replacement, which may have to be done by the operator in an emergency.

The illustration above shows the location and type of all tubes used in the equipment. The spare tubes furnished with the RDR consists of one tube of each type used and when more than one tube of a given type is suspected as the cause of trouble it will be necessary to replace them one at a time till the defective tube is located.

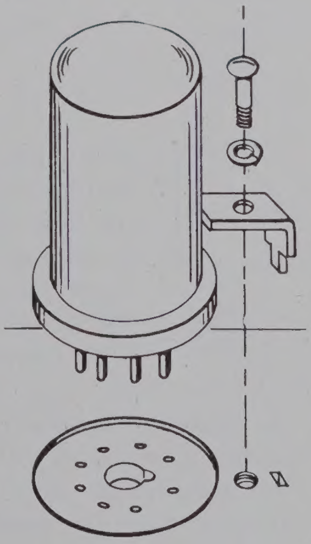
REPLACING TUBES



Several methods of clamping the tubes in place in their respective sockets are employed in the RDR equipment. It is important in replacing tubes to replace or tighten the clamps when tubes are replaced to prevent vibration loosening the tubes in the sockets.

The smaller tubes, particularly in the R-F and Multiplier sections, should be handled carefully to prevent damage to the wire prongs. These tubes are held in place by springs enclosed in the tube shield. The shields are fitted with a bayonet joint and are removed by rotating the shield to the left till it can be removed from the base. After inserting the tube, the shield should always be replaced before testing the operation of the equipment.

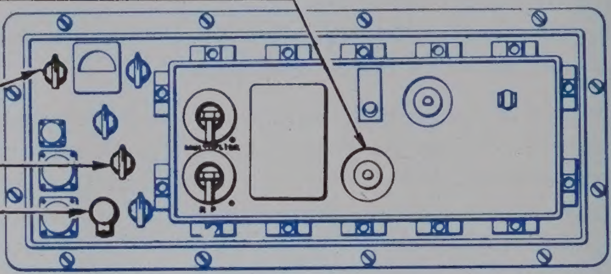
The metal enclosed tubes are clipped into place by an L shaped clamp that is held in place by a machine screw. To release the clamp, the machine screw is loosened by a screwdriver till the clamp will raise far enough to free the lower end from the hole in the chassis and permit the clamp to be turned a quarter turn to free it from the tube base. The tube may then be withdrawn from its socket and tested or replaced as necessary. The clamp is again swung back into position and the screw tightened to lock the tube in place.



RECEIVER TUNING CHART

PRELIMINARY ADJUSTMENTS

- Remove cover of selector panel.
- Switch on MAR equipment if Universal Power supply is used.
- Start gas engine if operating from generator.
- Switch power on to receiver and allow to heat 5 minutes.



Rotate channel selector switch to Position 1.

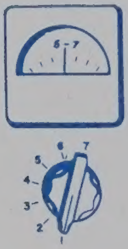
SET:

Output level at 5 or 6

Silencer level at 0

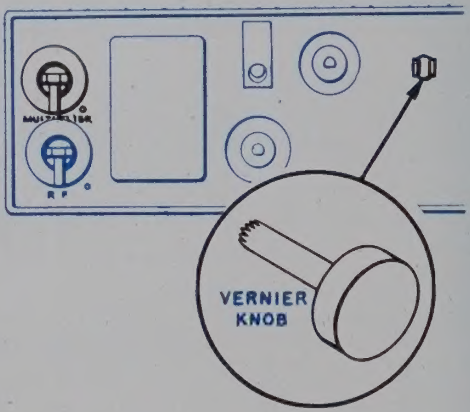
Plug headset into jack on panel

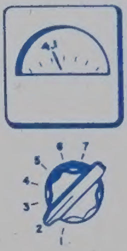
TUNING



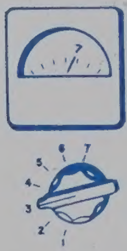
Rotate meter switch to Position 1

Unlock Multiplier dial by raising lever straight out from dial. Insert vernier knob into hole adjacent to dial and rotate the dial slowly until a reading of 5 to 7 is obtained on the meter. Do not lock dial.

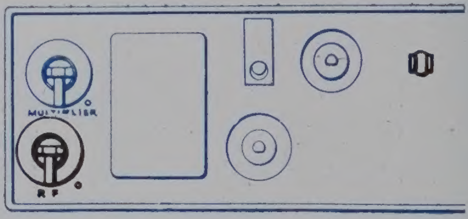




Rotate meter switch to Position 2 and readjust Multiplier dial slightly to obtain a reading of at least 4.1 on the meter. Then lock dial by depressing lever without disturbing setting.



Rotate meter switch to Position 3 and unlock R. F. dial by raising lever. Insert vernier knob and rotate dial slowly and note increase in background noise in receiver. Maximum noise with a minimum meter reading of 7 indicates proper resonance. The dial is then locked. This completes tuning for the first channel frequency.



The channel selector switch is moved to position 2 and the above tuning sequence repeated to tune the equipment for the second channel frequency. The procedure must be repeated at all ten positions of the channel selector switch, thus completing the tuning of the receiver.

The operation of the tuning mechanism can be checked by picking up a signal on one frequency channel, switching to another frequency to cut it off and then switching back to the channel on which the signal was received.

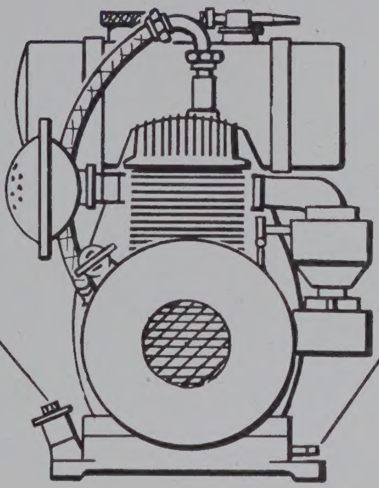
The cover is then replaced over the selector panel, making certain the vernier knob is fitted into the clip on the panel. Start thumbscrews on cover into tapped holes in panel frame to hold cover in place and rotate channel selector switch and power switch knobs till the pins and holes in the coupling disks on knobs and switches engage and then tighten cover into place with thumbscrews.

LUBRICATION CHART

GAS ENGINE GENERATOR

Check every 8 hours of operation.

Keep filled to level of plug opening, use oil of proper grade as indicated in table below. Replace plug tightly and wipe off excess oil.



Oil governor linkage when refilling crankcase.

Drain crankcase and refill with fresh oil after every 25 hours of operation. Drain only when engine is warm and make certain plug is tight before refilling crankcase.

CRANKCASE LUBRICANT

NAVY SYMBOL NO. 2190 OR NO. 2135	
GRADE	**TEMPERATURE**
SAE 20	Summer and winter down to—10° F.
10 W—70% Kerosene—30%	Down to—30° F.
10 W—60% Kerosene—40%	Down to—40° F.

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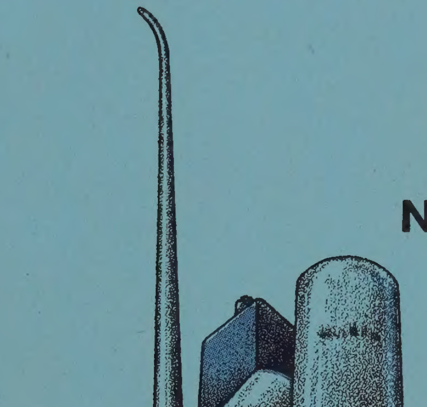
PREVENTIVE MAINTENANCE

SECTION 6



NAVY MODEL

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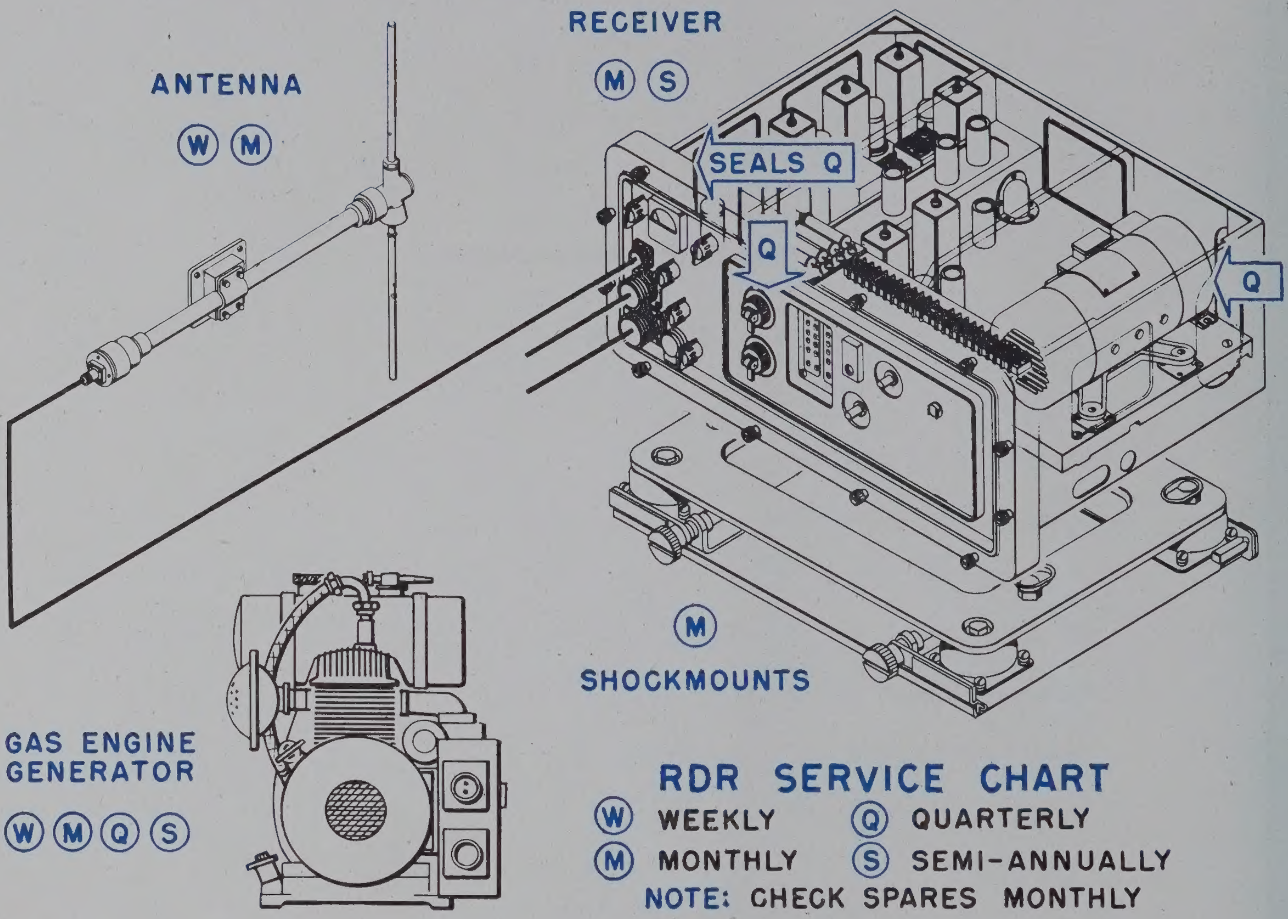
- Monthly Check 6-5
- Quarterly Check 6-8
- Semi-Annual Check 6-9

Lubrication Chart (Selector Mechanism) 6-10

SERVICING RDR EQUIPMENT



It has been found that equipment breakdown may be minimized or eliminated by periodic inspection and servicing. Slight symptoms usually give warning of operating irregularities which preventive maintenance, systematically employed, will discover and correct. Increased equipment life and greater overall efficiency will result if the preventive maintenance charts in this section are conscientiously followed.

The removal of dust and dirt from equipment is usually a "must" on very-high-frequency apparatus, but the sealed RDR case makes this chore unnecessary. Except where itemized under specific component headings, cleaning should present no problem.

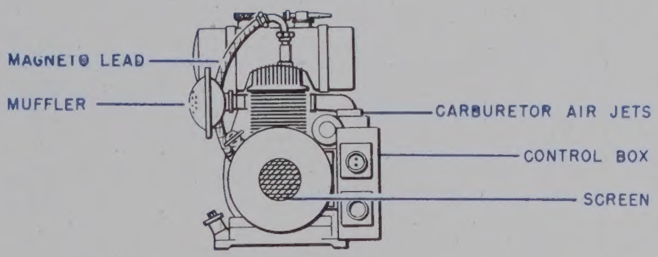
The relative importance of an antenna system to the rest of the radio equipment increases considerably at the operating frequencies of the RDR receiver. Therefore, the value of the notes on antenna maintenance will readily be seen.

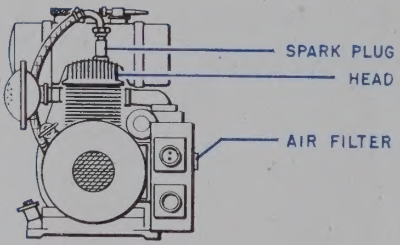
Preventive maintenance, as applied to tubes, involves only the periodic checking of efficiency to prevent burnouts. The gradual loss of output that precedes tube failure should be heeded and replacements made before such failure occurs.

The cabling used with the RDR, will probably receive the most abuse and, accordingly, will be subject to more breakdown possibilities. While all cables and connectors have been designed to function under severe operating conditions, the prompt remedial treatment of slight physical damage will minimize wiring failure. The maintenance steps outlined will aid in discovering and eliminating potential trouble spots.

PREVENTIVE MAINTENANCE CHART

WEEKLY CHECK

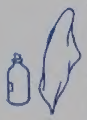
UNIT	PROCEDURE
ANTENNA	Check all mounting bolts or clamps for rigidity. Check radiating rods for damage and tightness. Check coaxial connectors for tightness. Check coaxial cable to be sure that no part of the cable lies parallel to the radiating rods within a distance of five feet.
GAS ENGINE GENERATOR	 MAGNETO LEAD MUFFLER CARBURETOR AIR JETS CONTROL BOX SCREEN Tighten all bolts and grounding strap. Clean around carburetor to keep the air intake jets from becoming clogged. Wipe off magneto lead to spark plug. Keep wiring free from oil, water, or grease. Wipe off screen in end bell of generator to keep air passages clean. Inspect muffler for clogging of exhaust holes. Stoppage of these holes may cause overheating or render engine inoperative. Inspect control box switch as to proper position for type of operation desired, i.e., "Radio" or "Battery Charge." While charging batteries, listen for intermittent clicking of reverse current relay in control box. If relay is heard, turn rheostat at control box to produce 13.3 volts at generator terminals. Continued relay operation at adjusted higher voltage output localizes trouble in control box circuit. (Note: Clicking of relay is normal when batteries are fully-charged.)

	UNIT	PROCEDURE
25 HOUR CHECK	**GAS ENGINE GENERATOR (Cont'd)**	Change crankcase oil after each 25-hour operating period and refill with one pint of oil suitable for climatic conditions as indicated on lubrication chart on page 5-7. Drain oil while engine is warm since more complete drainage is obtained and accumulated sediment and foreign matter will be removed more effectively.
50 HOUR CHECK		 Remove spark plug and examine porcelain. Discard plug if porcelain is cracked and replace with new plug and gasket from spares. If plug points are fouled, clean and reset points to 0.020 inches. (Frequent fouling of points requires carburetor adjustment. See Section 7.) Remove head and clean carbon from head, cylinder, piston, and valves. The presence of heavy carbon deposits is evidenced by difficulty in starting and by pounding or knocking under load. Remove air cleaner filter cartridge and inspect. If dirty, replace with new cartridge from spares. Replace oftener, if required, under unusually dusty or dirty operating conditions.
75 HOUR CHECK		Adjust valve clearance and grind valves.

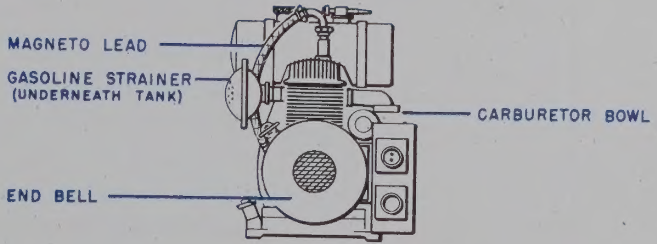
MONTHLY CHECK

UNIT	PROCEDURE
RECEIVER	 Remove chassis from case and tighten all terminal strip mounting bolts and all connections to strips. Tighten all selector bolts and bolts holding selectors to chassis. Tighten all setscrews on gear linkage system and from gearing to part operated. Tighten bolts holding dynamotor in place. Inspect rubber mounts at same time for any appearance of cracking. Inspect rubber gaskets behind panels and under metal panel covers for breaks or excessively deep ridges. Inspect all flexible rubber sheaths around switches for cracks or breaks. Insert headset plug in jack for test of rubber seal around plug. Looseness indicates worn seal and replacement is necessary. See that hinge cover fits snugly with plug removed. Brown or charred insulation is an obvious warning and all components in the circuit should be checked for causes. Check cables at points of attachment to connectors for evidence of cracks or breakage of rubber seal that may develop into damage to cable wiring. If cracks are present, repair by replacing rubber seal. Inspect plug pins for corrosion. Clean with crocus cloth or fine sandpaper. (A rubber eraser, with a hole bored in it, twisted around a pin several times makes a good cleaner.) Use carbon tetrachloride afterward. See that fuses and clamp-type resistors are secure in clamps and that clamps are tight.

MONTHLY CHECK (Cont'd)

UNIT	PROCEDURE
RECEIVER (Cont'd)	 Visually inspect all resistors and capacitors for signs of any spots, discoloration, bulging, or leakage. This indicates deterioration or a partial breakdown, and such components should be checked for deviation from their design values. Circuits involved should also be checked.
	An area of discolored or oxidized metal near a component may also indicate overheating.
	Rotate wafer switches to wipe off possible oxidation. If contacts remain discolored or oxidized, rotate switch with piece of heavy paper between contacts, cleaning afterward with carbon tetrachloride.
	Rotate Silence and Output Level knobs to insure that wiping arm is not loose and is making firm contact.
	Rotate all rheostat and potentiometer arms to wipe off possible oxidation and to make certain wiping arm is making firm contact.
	Inspect silica gel units clipped in bottom of cases and replace if drying material, viewed through mica window, shows pink color.
	Check all tubes in a transconductance type tester, if possible. Tube 9003 must be checked on this type tester but the other tubes may be checked on an emission tester, if necessary. Remove tubes one at a time when testing to be certain each tube is replaced in same socket from which removed. Interchanging of tubes with same number will probably unbalance one or more stages, requiring re-alignment. Replace any tube registering below 70% of normal in tests. If emission tester is used and a tube checks normal but will not function in set, replacement is necessary.
	Tube clamps are of several types and each should be tightened carefully. Bayonet-type tube shields should be turned clockwise to tighten. A spring in the shield holds the tube in place.
	Connect power cable temporarily. Switch on dynamotor and operate selector mechanism to locate any bearing trouble, usually indicated by grinding noises, knocking, or repeated thumps.

MONTHLY CHECK (Cont'd)

UNIT	PROCEDURE
SHOCK-MOUNTS	Put drop of oil on each pointed pin at rear of slides and on clamping screw to insure ease of operation. Check all bolts and nuts for tightness. No movement should take place at any point of attachment of assembly to receiver case or to support when case is rocked back and forth.
SPARES	Check number of spare parts and order all components necessary to bring list up to prescribed quantities. Test all spare tubes for quality.
ANTENNA	Wipe off insulator at base of "live" radiating rod. Inspect plugs and receptacles for dust or dirt. Clean with air blast, carbon tetrachloride, or small brush.
GAS ENGINE GENERATOR	 MAGNETO LEAD GASOLINE STRAINER (UNDERNEATH TANK) CARBURETOR BOWL END BELL Inspect for wear or possible leaks in rubber gasket on door seal of carrying case. Repair or replace, if seal is not perfect. Clean gasoline strainer by removing fuel line valve from tank and washing in clean gasoline. Use air blast if washing does not remove sediment. Clean carburetor bowl of any sediment by removing drain plug on side of bowl. Test magneto output by removing shield and cable from spark plug. Holding cable by insulation to avoid shock, turn engine over with starting rope. If end of cable is held one-eighth inch from metal body of plug, a spark should appear in the gap. No spark indicates need to check magneto output if cable is undamaged. See Section 7 for magneto servicing details.

	UNIT	PROCEDURE
MONTHLY CHECK (Cont'd)	**GAS ENGINE GENERATOR (Cont'd)**	Remove end bell housing of generator and inspect commutator while in operation under load.
		Remove brushes and inspect for pitting. If pitted, replace with new brushes.
		Brushes should be at least $\frac{3}{8}$″ long to make good contact. If short, replace. When removing brushes for inspection make certain each brush is returned to same holder and is in same position as when removed.
		Inspect commutator surface. A smooth, reddish-brown appearance is normal and commutator should not be touched. If surface is blackened, sand lightly with fine sandpaper.
		A grooved or worn commutator calls for replacement of generator unit from spares, and overhaul of old unit.
		Excessive sparking at commutator or chattering of brushes will result in damage to commutator surface. Replace with new generator unit from spares and overhaul old unit.
		If any grease or oil is noted on comutator, this indicates bearing grease seal has broken down. Remove generator and overhaul to prevent damage to unit.
		Brush-holding springs should be firm and of a length to maintain sufficient pressure on brushes. If weak, replace.
QUARTERLY CHECK	**SELECTOR MECHANISM**	Test for gear backlash by turning various shatts by hand. If excessive, replace gears involved.
		Inspect gears visually for signs of wear. Replace, if wear is noticeable. Lubricate as indicated on chart on page 6-10.
	WATER SEALS	With all panel covers in place and plugs inserted, apply three pounds of air pressure to case through air valve in top of case. Case should hold this pressure for 5 minutes. If a leak is indicated, attempt to locate leak by ear. If unsuccessful, place case on back with panel up and use standard soapy water test applied to all openings. Replace gaskets or repair as necessary.

	UNIT	PROCEDURE	SEE
QUARTERLY CHECK (Cont'd)	**DYNAMOTOR**	Brushes in motor units (dynamotor and tuning motor) should be removed and inspected for scoring or pitting. If pitted, excessive sparking at commutator is indicated. Replace entire unit with component from spares and repair.	Sec. 7
		All brushes should be at least 3/8" long to make good contact. If short, replace. When removing brushes for inspection make certain each brush is returned to its holder and is in same place as before removal.	
		Brush holding springs should be firm and of length to maintain sufficient pressure on brushes. Replace, if weak.	
	GAS ENGINE GENERATOR	Check magneto point setting after approximately 200 hours of operation. Set to 0.020 inches.	Sec. 7
		Place drop of oil on felt oil wick under bearing pin of magneto breaker arm.	
		Test compression by turning engine over slowly and noting resistance of compression stroke on alternate revolutions. If resistance is not noticeable, compression is poor denoting worn rings, leaky gaskets, or defective valves. Overhaul of engine is remedy. At any event, engine should be taken down and overhauled every 300 hours of operation.	Sec. 7
SEMI ANNUAL CHECK	**RECEIVER**	Check sensitivity and output of receiver. Realign if output is below standard.	Sec. 7
		Remove dynamotor and tuning motor for overhaul and repair. Replace with spare units.	Sec. 7
	GAS ENGINE GENERATOR	Remove generator for inspection and overhaul.	

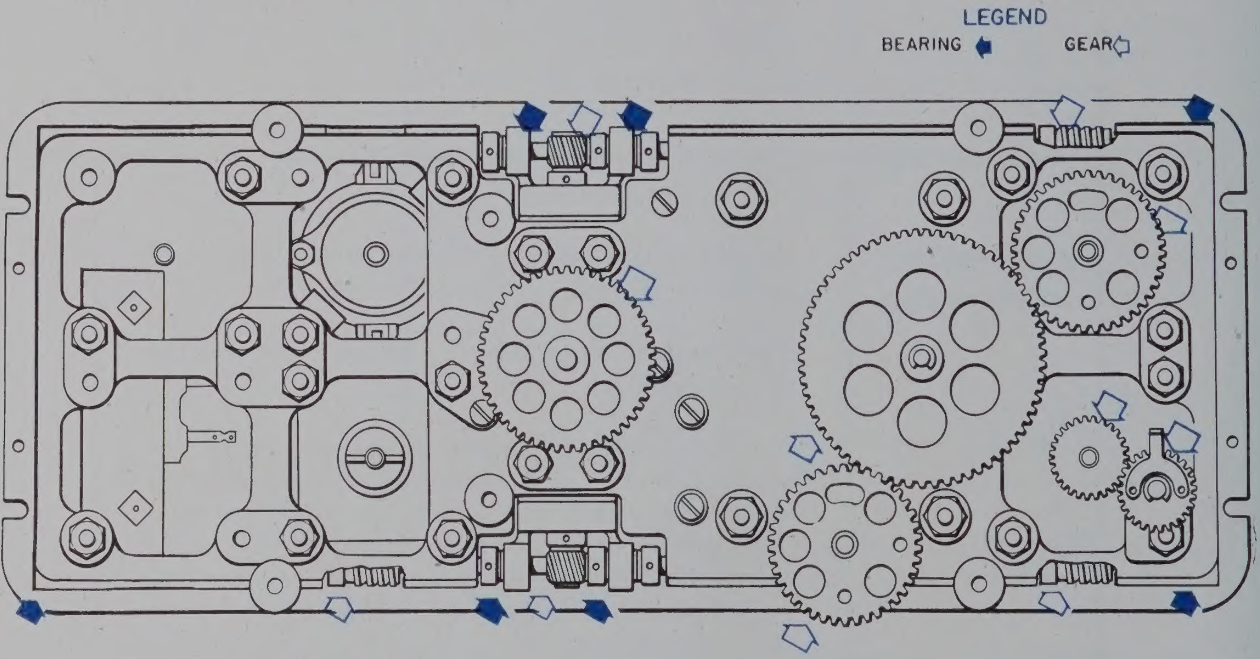
LUBRICATION CHART

SELECTOR MECHANISM

Lubricant to be used—Univis 60

Apply lubricant sparingly to teeth of gears and bearings indicated by arrows.

Carefully remove any excess and do not allow oil to drip on wiring or electrical components of the receiver circuits. All surfaces not subject to friction should be wiped free of oil with a clean cloth.



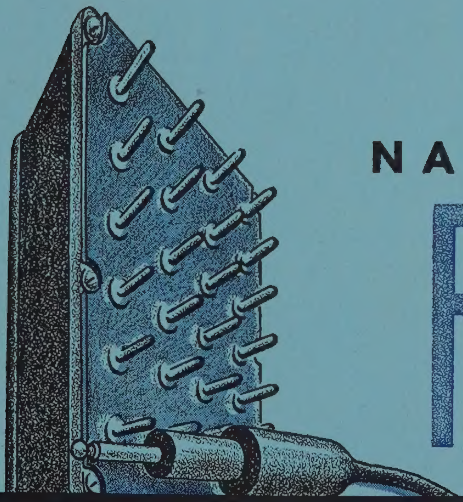
NOTE

Do not attempt to lubricate the interior mechanism of the selectors while they are in place in the chassis. Lubrication of these units is best taken care of when they are disassembled and under no conditions must oil heavier than Sperm oil be used in these units.

NAVSHIPS 900,841

PARTS AND SPARE PARTS

SECTION 8



NAVY MODEL

RDR

RADIO RECEIVING EQUIPMENT

RESTRICTED

TABLE 8-1
LIST OF MAJOR UNITS
RDR RECEIVER EQUIPMENT (CRV-46283)

QUANTITY	NAME OF MAJOR UNIT	NAVY TYPE DESIGNATION	SYMBOL GROUP
1	RADIO RECEIVER UNIT	CRV-46283	201 - 699 801 - 899
1	ANTENNA ASSEMBLY	CRV-66147	1001 - 1099

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP. BOX NO.	EQUIP. QUAN.	TENDER BOX NO.	TENDER QUAN.	STOCK BOX NO.	STOCK QUAN.
		A-101	Support assem: selector drive mechanism, consisting of support, three shafts, two gear assem, three gears, four ball bearings, six needle bearings and two retainer rings mtd on bracket 4.4217" lg x 1.406" wd x 1-25/32" thk	For Vertical Selector Drive			2Z9057-32	1	719691-501	A-101	1					3	1
		A-102 to A-104	Not Used														
		A-105	Housing assem: consisting of aluminum housing 12-5/16" lg x 4-11/16" wd x 3-9/32" wd, crystal switch assem, homing selector switch assem, limiter switch assem, selector switch, gears, gear assem, cover assem, and hardware	For RDR Unit			2C770	1	888181-502	A-105	1			2	1	3	2
		A-801	Vibration mount: square, 3 lbs load rating at 1/16 deflection, 1-1/4" sq x 13/32" thk, four 0.141" diam mtg holes on 1" centers, 0.166" diam hole thru center	For Dynamotor D-801			2Z8402-35	371 Cat. #100PN3	429667-3	A-801	4	1	1	2	4	3	4
		A-1001	Cap assem: consisting of one amphenol cap and 3" #10 nickel silver bead chain, cap 3/4" diam x 1/4" wd tapped W/5/8-24 thds, including one neoprene washer 3/32" thk	Cap Assem for Dipole Antenna Z-1000			2Z1612.1	1	433921-4	A-1001	1					3	1
		B-601	Not Used														
		B-602	Motor assem: consisting of motor 115 v dc, 1/40 hp, 5800 rpm, starting current 0.6 amp max, running current 4 amp max, series wound reversible 3.125" lg x 2-3/8" diam shaft end x 1-7/8" diam other end, three mtg holes #6-32 x 5/16" d equally spaced on 1-15/16" diam centers, shaft 0.2500" diam extends 0.266", three wire leads black, white and yellow 10" lg, gear assem, consisting of stainless steel pinion 0.3749" OD x 0.375" lg, 48 pitch, 16 teeth, 0.333" pitch diam, 14-1/2° pressure angle, 3/16" face, stainless steel hub 0.562" lg x 0.437" OD x 0.2501" ID for 0.366" x 0.2801" ID to end #6-32 tap, two holes 0.063" diam one side	Selector Motor	-211452-A		3H3100A-25	1358	429658-501	B-602	1	1	1	2	2	3	3
		B-602A	Brush: electrical contact, complete with spring 0.260" diam x 7/8" lg overall, marked positive	For Motor B-602			3H525-180	1358 X-2551-T	889582-1	B-602A	1	1	5	2	10	3	20

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS,JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
B-602B	Brush: electrical contact, complete with spring 0.260" diam x 7/8" lg overall, marked negative	For Motor B-602			3H525-180	1358 X-2551-U	889582-2	B-602B	4	1	5	2	10	3	20
B-602C	Brush holder assem: 0.498"/0.496" turn diam complete W/lug tinned for 1/4"	For Motor B-602			3H2507-46	1358 Dwg X-2011-T	889890-1	B-602C		1	2	2	4	3	6
C-201	Capacitor: variable, air rated less than 2.2 mmf min and more than 9 mmf max, one stator, two rotor plates 1-7/32" diam x 1-5/32" lg x 15/16" wd, must withstand 500 v rms at 60 cyc between opposing plates without breakdown	Antenna Compensator	-482812		3D900V-15	1	433576-1	C-201	1	1	1	1	1	2	1
C-202	Capacitor: variable, air, 10.3 mmf max cap, 2.3 min cap, six stator, six rotor plates 3/4" diam x 1-13/32" lg x 5/8" wd	Receiver Antenna Circuit Trimmer	-483889		3D9010VE3-2	887	433585-1	C-202,206,210, 214,218	5	1	3	1	5	2	5
C-203	Capacitor assem: variable, consisting of one variable capacitor, base material steatite or glass bonded mica ten sect C-203A to C-203J, max 6.7 mmf and min less than 2.5 mmf, ea sect 500 v rms test, 10.250" lg x 4.5" wd x 2" thk, with shaft extension stainless steel 0.312" lg x 0.343" diam, including two brass bushings and five coils L-202,205,208,211,216, mtd on an aluminum chassis and partition assem	Condenser Receiver R-F Tuning	-482817 JAN I 10 Grade L3			509	618530-501	C-203	1						
C-203A	Part of C-203	Condenser Antenna Tuning													
C-203B	Part of C-203	Condenser Antenna Tuning													
C-203C	Part of C-203	Condenser V-201 Grid Tuning													
C-203D	Part of C-203	Condenser V-201 Grid Tuning													
C-203E	Part of C-203	Condenser V-201 Plate Tuning													
C-203F	Part of C-203	Condenser V-201 Plate Tuning													
C-203G	Part of C-203	Condenser V-202 Grid Tuning													
C-203H	Part of C-203	Condenser V-202 Grid Tuning													
C-203I	Part of C-203	Condenser V-203 Plate Tuning													
C-203J	Part of C-203	Condenser V-203 Plate Tuning													

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-204	Capacitor: fixed, silver mica, 500 mmf ±10%, 350 v ac, 500 vdcw, two brass silver-plated term lug type, 29/64" diam 7/16" lg	Plate Bypass of Tripler Tube V-203	-482813-10 48A349		3D9500-143	727 Cat. #830	888508-1	C-204,223,227, 228,229	5	1	1	1	3	2	5
C-205	Capacitor: variable, air, dual, 4.5 to 50 mmf, one sect 1-1/8" d x 15/16" wd x 1-7/32" h, seven stator, seven rotor plates, rotor grounded to mtg lug, must withstand 500 v rms at 60 cyc between opposing plates, ceramic base, two #4-40 tapped holes on 21/32" mtg/c	Antenna Padder	-482811		3D9050V-60	1	433905-1	C-205,209,213, 217,221	5	1	3	1	5	2	5
C-206	Same as C-202	Grid Trimmer of RF Amplifier Tube V-201	-483889		3D9010VE3-2										
C-207	Capacitor: titanium oxide, fixed, 1800 mmf +50% -20%, 350 vdcw, 1-1/8" lg x 5/16" hex, two hook term	V-201 Filament Bypass	-482869-20 RE48A447		3DA1.800-8	727 High K	887883-3	C-207,222,225, 226,244,245, 246,247,349, 350,351,352, 353,354,511, 525,528,529	18	1	4	1	12	2	18
C-208	Capacitor: titanium oxide, ceramic, insulated, 700 mmf ±20%, 350 vdcw, single radial lead 2-1/4" lg, 19/32" hex #2-56 tap for screw 1/4" d	V-201 Filament Bypass	-482816		3D9700-15	1 High K	893972-2	C-208,224,231, 232,233,234, 235,236,237, 239,240,241	12	1	3	1	8	2	12
C-209	Same as C-205	Grid Padder of RF Amplifier Tube V-201	-482811		3D9050V-60										
C-210	Same as C-202	Plate Trimmer of RF Amplifier Tube V-201	-483889		3D9010VE3-2										
C-211 & C-212	Not Used														
C-213	Same as C-205	Plate Padder of RF Amplifier Tube V-201	-482811		3D9050V-60										
C-214	Same as C-202	Grid Trimmer of First Detector Tube V-202	-483889		3D9010VE3-2										
C-215 & C-216	Not Used														
C-217	Same as C-205	Grid Padder of First Detector Tube V-202	-482811		3D9050V-60										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-218	Same as C-202	Plate Trimmer of Tripler Tube V-203	-483889		3D9010VE3-2										
C-219 & C-220	Not Used														
C-221	Same as C-205	Plate Padder of Tripler Tube V-203	-482811		3D9050V-60										
C-222	Same as C-207	V-201 AVC Filter	-482869-20		3DA1.800-8										
C-223	Same as C-204	Grid Return of Amplifier Tube V-201	-482813-10		3D9500-143										
C-224	Same as C-208	Screen Bypass of RF Amplifier Tube V-201	-482816		3D9700-15										
C-225	Same as C-207	Plate Supply Bypass of RF Amplifier Tube V-201	-482869-20		3DA1.800-8										
C-226	Same as C-207	Plate Supply Bypass of RF Amplifier Tube V-201	-482869-20		3DA1.800-8										
C-227	Same as C-204	Grid Filter of First Detector Tube V-202	-482813-10		3D9500-143										
C-228	Same as C-204	Screen Bypass of First Detector Tube V-202	-482813-10		3D9500-143										
C-229	Same as C-204	Plate Bypass of Tripler Tube V-203	-482813-10		3D9500-143										
C-230	Not Used														
C-231	Same as C-208	Cathode Bypass of RF Amplifier Tube V-201	-482816		3D9700-15										
C-232	Same as C-208	Heater Bypass of RF Amplifier Tube V-201	-482816		3D9700-15										
C-233	Same as C-208	Cathode Bypass of RF Amplifier Tube V-201	-482816		3D9700-15										
C-234	Same as C-208	Cathode Bypass of First Detector Tube V-202	-482816		3D9700-15										
C-235	Same as C-208	Heater Bypass of First Detector Tube V-202	-482816		3D9700-15										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-236	Same as C-208	Cathode Bypass of First Detector Tube V-202	-482816		3D9700-15										
C-237	Same as C-208	V-201 Cathode Bypass	-482816		3D9700-15										
C-238	Capacitor: fixed, ceramic, 11.3 mmf ±0.1 mmf, temp coeff 0°/C +0.000060 or -0.000110 deg, rated 500 vdcw, 0.562" max lg x 0.250" max diam, two axial wire leads 1-1/2" lg	Coupling from Multiplier to RF Tripler	-483890-1		3D9011A3	207 Style K	981039-2	C-238	1	1	1	1	1	2	1
C-239	Same as C-208	Cathode Bypass of Tripler Tube V-203	-482816		3D9700-15										
C-240	Same as C-208	Heater Bypass of Tripler Tube V-203	-482816		3D9700-15										
C-241	Same as C-208	Heater Bypass of Tripler Tube V-203	-482816		3D9700-15										
C-242 & C-243	Not Used														
C-244	Same as C-207	6.3 V Heater Bypass	-482869-20		3DA1.800-8										
C-245	Same as C-207	12.6 V Heater Supply Bypass	-482869-20		3DA1.800-8										
C-246	Same as C-207	6.3 V Heater Supply Bypass	-482869-20		3DA1.800-8										
C-247	Same as C-207	Grid Return of Tripler Tube V-203	-482869-20		3DA1.800-8										
C-248	Capacitor: fixed, silver mica, 2400 mmf ±10%, 350 v ac, 500 vdcw, 31/64" x 3/4" lg	Grid Filter of Tripler Tube V-203	-482814 RB48A402		3DA2.400-12	1	887816-1	C-248,312,313, 317,321,324, 331,332,333, 334,335,518, 521,523,527, 531,534,535, 536	19	1	4	1	12	2	19
C-301	Capacitor: fixed, uninsulated, composition, 47 mmf ±2-1/2%, temp coef 0°/C +30 -45 deg, 500 vdcw, 0.460" lg x 0.240" diam, two radial wire leads	Primary Tuning of 1st IF Transformer Z-301	-483936 JAN C20		3D9047-19	207	429660-1	C-301,302,303, 304,305,306, 307,308,309, 310	10	1	2	1	6	2	10
C-302	Same as C-301	Secondary Tuning of 1st IF Transformer Z-301	-483936		3D9047-19										
C-303	Same as C-301	Primary Tuning of 2nd IF Transformer Z-302	-483936		3D9047-19										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-48283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		C-304	Same as C-301	Secondary Tuning of 2nd IF Transformer Z-302	-483936		3D9047-19										
		C-305	Same as C-301	Primary Tuning of 3rd IF Transformer Z-303	-483936		3D9047-19										
		C-306	Same as C-301	Secondary Tuning of 3rd IF Transformer Z-303	-483936		3D9047-19										
		C-307	Same as C-301	Primary Tuning of 4th IF Transformer Z-304	-483936		3D9047-19										
		C-308	Same as C-301	Secondary Tuning of 4th IF Transformer Z-304	-483936		3D9047-19										
		C-309	Same as C-301	Primary Tuning of Diode IF Transformer Z-305	-483936		3D9047-19										
		C-310	Same as C-301	Secondary Tuning of Diode IF Transformer Z-305	-483936		3D9047-19										
		C-311	Capacitor: fixed, ceramic, 1800 mmf ±20%, insulated, operating voltage 350 v dc, 17/32" diam, 11/16" lg, two AWG #20 axial leads 1-1/2" lg	Grid Return Bypass of First IF Tube V-301	-482815		3DA1.800-11	1	888556-1	C-311,314,315, 316,318,319, 320,322,323, 325,326,330, 336,338,339	15	1	3	1	9	2	15
		C-312	Same as C-248	Plate Bypass of First Detector V-202	-482814		3DA2.400-12										
		C-313	Same as C-248	Cathode Bypass of First IF Tube V-301	-482814		3DA2.400-12										
		C-314	Same as C-311	Screen Bypass of First IF Tube V-301	-482815		3DA1.800-11										
		C-315	Same as C-311	Plate Bypass of First IF Tube V-301	-482815		3DA1.800-11										
		C-316	Same as C-311	Grid Return Bypass of Second IF Tube V-302	-482815		3DA1.800-11										
		C-317	Same as C-248	Cathode Bypass of Second IF Tube V-302	-482814		3DA2.400-12										
		C-318	Same as C-311	Screen Bypass of Second IF Tube V-302	-482815		3DA1.800-11										
		C-319	Same as C-311	Grid Return Bypass of Third IF Tube V-303	-482815		3DA1.800-11										
		C-320	Same as C-311	Plate Bypass of Second IF Tube V-302	-482815		3DA1.800-11										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
										BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-321	Same as C-248	Cathode Bypass of Third IF Tube V-303	-482814		3DA2.400-12										
C-322	Same as C-311	Screen Bypass of Third IF Tube V-303	-482815		3DA1.800-11										
C-323	Same as C-311	Plate Bypass of Third IF Tube V-303	-482815		3DA1.800-11										
C-324	Same as C-248	Cathode Bypass of Fourth IF Tube V-304	-482814		3DA2.400-12										
C-325	Same as C-311	Screen Bypass of Fourth IF Tube V-304	-482815		3DA1.800-11										
C-326	Same as C-311	Plate Bypass of Fourth IF Tube V-304	-482815		3DA1.800-11										
C-327	Capacitor: fixed, ceramic, 47 mmf ±10%, 500 vdcw 0.562" lg x 0.250" diam, two axial wire leads 1-1/4" lg	AVC Coupling of Second Detector Tube V-305	JAN CC21 UJ470K JAN C20		3D9047-5	722	722408-426	C-327	1	1	1	1	1	2	1
C-328	Capacitor: titanium oxide, 500 mmf ±20%, insulated thru capacitor, brass bushing 5/16" hex, #12-28 thd 1-1/8" lg, two axial wire leads with 1/8" hook at ea end	Plate Return Feed Thru of 2nd Detector Tube V-305	-482867-20 RE48A447 1		3D9500-179	1 High K	887883-1	C-328	1	1	1	1	1	2	1
C-329	Capacitor: fixed, paper, tubular, 0.020 mf +30% -20%, 600 vdcw, 7/16" diam x 1-1/2" lg, metal case mineral oil impregnated, two axial wire leads 2-1/4" lg	AVC Time Constant of Second Detector Tube V-305	-482625-20 RE48A163		3DA20-74	590 PX24A	95618-37	C-329,337	2	1	1	1	2	2	5
C-330	Same as C-311	IF Plate Supply Bypass	-482815		3DA1.800-11										
C-331	Same as C-248	Filter Bypass of First IF Tube V-301	-482814		3DA2.400-12										
C-332	Same as C-248	Filter Bypass of Second IF Tube V-302	-482814		3DA2.400-12										
C-333	Same as C-248	Filter Bypass of Third IF Tube V-303	-482814		3DA2.400-12										
C-334	Same as C-248	Filter Bypass of Fourth IF Tube V-304	-482814		3DA2.400-12										
C-335	Same as C-248	Filter Bypass of Second Detector Tube V-305	-482814		3DA2.400-12										
C-336	Same as C-311	Cathode Bypass for V-305	-482815		3DA1.800-11										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

		PARTS										SPARE PARTS					
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
												BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		C-337	Same as C-329	AVC Time Constant of Second Detector Tube V-305	-482625-20		3DA20-74										
		C-338	Same as C-311	IF Plate Supply Bypass	-482815		3DA1.800-11										
		C-339	Same as C-311	Plate Bypass for V-304	-482815		3DA1.800-11										
		C-340 to C-348	Not Used														
		C-349	Same as C-207	Filament Line Feed thru Bypass AF/RF Partition	-482869-20		3DA1.800-8										
		C-350	Same as C-207	Plate Supply Feed thru Bypass Partition	-482869-20		3DA1.800-8										
		C-351	Same as C-207	AVC Feed Thru Bypass Partition	-482869-20		3DA1.800-8										
		C-352	Same as C-207	Detector Cathode Bypass of Second Detector Tube V-305	-482869-20		3DA1.800-8										
		C-353	Same as C-207	Plate Supply thru Selector Partition	-482869-20		3DA1.800-8										
		C-354	Same as C-207	Screen Supply Feed thru Bypass Selector Partition	-482869-20		3DA1.800-8										
		C-401	Not Used														
		C-402	Capacitor: fixed, paper, 0.010 mf +60% -20%, 400 vdcw, metal case, pyranol oil filled, 1" lg x 7/16" diam, one axial wire lead 1-1/2" lg and one term soldered at right angles to side; for replacement use Navy Type -482808	Filter of Voltmeter Rect Noise Peak Limiter Tube V-401	-482808-20 RE48A440		3DA1D-358	207	889572-1	C-402,406	2	1	1	1	3	2	5
		C-403	Not Used														
		C-404	Capacitor: fixed, mica, 10,000 mmf ±10%, 500 vdcw, 1-1/32" lg max x 41/64" max wd x 11/32" max d, two axial leads ea 1-3/8" lg	Output Coupling of Voltmeter Rect	-JAN CM40B-103K JAN C5		3K4010321	203	722035-563	C-404,411,415, 417,	4	1	1	1	3	2	4

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP. BOX NO.	EQUIP. QUAN.	TENDER BOX NO.	TENDER QUAN.	STOCK BOX NO.	STOCK QUAN.
C-405	Capacitor: fixed, molded mica, 1000 mmf ±10%, 500 vdcw, 53/64" sq x 9/32" thk, with two axial leads 1-1/8" lg	Output Shunt of Voltmeter Rect Peak Limiter Tube V-401 (Part of Term Bd E-411)	JAN CM30B-102K JAN C5		3K3010221	793 Type CM30	722017-559	C-405	1	1	1	1	1	2	1
C-406	Same as C-402	Grid Squelch of First Af and Squelch Tube V-402			3DA1D-358										
C-407	Capacitor: fixed, oil filled, 1.0 mf +10% -3%, 400 vdcw, sealed in metal can, 2-3/4" h x 1-11/32" lg x 23/32" d overall	Cathode Bypass of First AF and Squelch Tube V-402	-48595A RE13A488		3DB1.52	1 72053-508	720555-2	C-407,409,410 414	4	1	2	1	6	2	10
C-408	Capacitor: paper, oil filled, 0.250" mmf +10% -3%, 400 vdcw, 1-7/8" h x 1-11/32" lg x 23/32" wd	Plate Silencer of First AF and Squelch Tube V-402	-481176 RE13A488		3DA25-30	1 72053-511	720555-1	C-408	1	1	1	1	2	2	3
C-409	Same as C-407	Plate Bypass of First Af and Squelch Tube V-402	-48595A		3DB1.52										
C-410	Same as C-407	Bleeder Bypass	-48595A		3DB1.52										
C-411	Same as C-404	Output Coupling of First Af and Squelch Tube V-402 (Part of Terminal Bd E-411)	JAN CM40B-103K		3K4010321.										
C-412	Not Used														
C-413	Capacitor: fixed, molded mica, 1500 mmf ±10%, 500 vdcw, 53/64" sq x 9/32" thk with two axial leads 1-1/8" lg	Grid Shunt of AF Output Tube V-403 (Part of Term BD E-411)	JAN CM30B-152K JAN C5		3K3015221	1	722017-563	C-413	1	1	1	1	1	2	1
C-414	Same as C-407	Cathode Bypass of AF Output Tube V-403	-48595A		3DB1.52										
C-415	Same as C-404	Output Coupling of Voltmeter Rect	JAN CM40B-103K		3K4010321										
C-416	Not Used														
C-417	Same as C-404	Shunt on Silence Lever Control	JAN CM40B-103K		3K4010321										
C-418	Capacitor: fixed, 25 mf, 25 vdcw, 2-19/32" lg x 1" diam, two lug term	Voltmeter Cathode	-482976		3DB25-78	714 LS-EP	895054-4	C-418	1	1	1	1	3	2	3

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP. BOX NO.	EQUIP. QUAN.	TENDER BOX NO.	TENDER QUAN.	STOCK BOX NO.	STOCK QUAN.
		C-501	Capacitor: variable, trimmer, ceramic, rounded at one end, 7/8" lg x 11/16" wd x 3/8" h overall, rated 1.5 to 7.0 mmf (part of C-505)	This Trimmer which is an Integral Part of C-505 is Not Used in RDR Circuit				1	719687-1	C-501, 502, 503 504	4						
		C-502	Same as C-501 (part of C-505)	Variable Trimmer													
		C-503	Same as C-501 except rated 3 to 12 mmf (part of C-505)	Variable Trimmer													
		C-504	Same as C-501 (part of C-505)	Variable Trimmer													
		C-505	Capacitor assem: variable, air dielectric consisting of four sections A,B,C,D, four ceramic trimmers C-501, 502, 503, 504, and three copper straps silver plated, mtd on steatite bonded mica base plate, three #8-32 tapped mtg holes on 0.937" x 6.92" mtg/c 10-1/4" lg x 2-3/8" wd x 2" h, approx overall including shaft 1/2" lg x 0.250" diam	Multiplier Gang Tuning	-483891		3D9072VB-75	1	719687-1	C-505	1	1	1	1	1	2	1
		C-505A	Capacitor: variable, air dielectric, consisting of six stator and seven rotor plates, silver plated, rated capacity including trimmer 6.4 ±1 mmf to 45.30 mmf (part of C-505)	This Section which is an Integral Part of C-505 is Not Used in RDR Circuit				1	719687-1	C-505A	1						
		C-505B	Capacitor: variable, air dielectric, consisting of nine stator and ten rotor plated, silver plated, rated capacity including trimmer 7.8 ±2 mmf to 67.95 mmf (part of C-505)	Plate Tuning of Second Tripler Tube V-502				1	719687-1	C-505B	1						
		C-505C	Capacitor: same as C-505B except rated capacity 6.4 ±1 mmf to 67.95 mmf (part of C-505)	Plate Tuning of First Tripler Tube V-503				1	719687-1	C-505C	1						
		C-505D	Capacitor: same as C-505B except rated capacity 5.8 ±1 mmf to 67.95 mmf (part of C-505)	Plate Tuning of Oscillator Doubler Tube V-504				1	719687-1	C-505D	1						
		C-506	Capacitor: variable, ceramic dielectric, 7 mmf min to 45 mmf max, temp coef -500 mmf/mmf/°C x 10 -6, 55/64" lg x 41/64" wd x 3/8" h, two radial lug terminals	Plate Pad Trimmer of Second Tripler Tube V-502	-481623		3D9045V-14	207 Type N500 Style TS2A	868903-3	C-506	1	1	1	1	1	2	1
		C-507 to C-510	Not Used														

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
										BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-511	Same as C-207	Supply Lead Thru Bypass	-482869-20		3DA1.800-8										
C-512 & C-513	Not Used														
C-514	Capacitor: fixed, silver mica, 280 mmf ±2-1/2%, 500 vdcw, 29/64" diam x 11/32" lg with 9/32" lg lug terminal one end and #4-40 tap x 1/8" d hole other end	Plate Pad of Second Tripler Tube V-502	-483892-2½		3D9280-2	727 830	888508-3	C-514	1	1	1	1	1	2	1
C-515	Not Used														
C-516	Capacitor: fixed, ceramic dielectric, 91 mmf ±10%, 500 vdcw, uninsulated two-wire term	Grid Coupling of Second Tripler Tube V-502	JAN CC30TJ-910K JAN C20		3D9091-6	32	722423-383	C-516,539	1	1	1	1	2	2	2
C-517	Capacitor: fixed, silver mica, 720 mmf ±2-1/2%, 500 vdcw, 15/32" lg x 31/64" diam with 9/32" lg lug term one end and #4-40 tap hole x 1/8" d in 7/32" diam hub other end	Plate Pad of First Tripler Tube V-503	-483893-2½		3D9720-2	834 Cat #834	894398-1	C-517	1	1	1	1	1	2	1
C-518	Same as C-248	Grid Bypass of First Tripler Tube V-503	-482814		3DA2.400-12										
C-519	Capacitor: fixed, ceramic dielectric, JAN C20, 10 mmf ±1 mmf, 500 vdcw, 0.562" lg x 0.250" diam, two axial wire leads 1-1/4" lg x 0.025" or 0.032" diam	For Grid Coupling of First Tripler Tube V-503	JAN CC21CH-100F JAN C20		3D9010-84	207	722408-63	C-519	1	1	1	1	1	2	1
C-520	Capacitor: fixed, silver mica, 850 mmf ±2-1/2%, 500 vdcw, 15/32" lg x 31/64" diam with 9/32" lg lug term one end and #4-40 tap hole x 1/8" d in 7/32" diam hub other end	Plate Pad of Osc Doubler Tube V-504	-483894-2½		3D9850-3	727 Cat #834	894398-2	C-520	1	1	1	1	1	2	1
C-521	Same as C-248	Cathode of Osc Doubler Tube V-504	-482814		3DA2.400-12										
C-522	Not Used														
C-523	Same as C-248	V-505 Plate Bypass	-482814		3DA2.400-12										
C-524	Not Used														

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		C-525	Same as C-207	Plate Supply Lead Thru Bypass	-482869-20		3DA1.800-8										
		C-526	Not Used														
		C-527	Same as C-248	Heater Bypass of Second Tripler Tube V-502	-482814		3DA2.400-12										
		C-528	Same as C-207	12.6 V Heater Supply Lead Thru Bypass	-482869-20		3DA1.800-8										
		C-529	Same as C-207	6.3 V Heater Supply Lead Thru Bypass	-482869-20		3DA1.800-8										
		C-530	Not Used														
		C-531	Same as C-248	Heater Bypass of First Tripler Tube V-503	-482814		3DA2.400-12										
		C-532	Capacitor: fixed, oil impregnated, 0.1 mf ±20%, 300 vdcw, molded case 1-7/16" lg, 3/8" thk, 3/4" wd, axial leads 1-1/4" lg	Thermostat Bypass	-481027-20 C 75/421		3DA100-612	721	97670-10	C-532,533	2	1	1	1	3	2	5
		C-533	Same as C-532	Thermostat Bypass	-481027-20		3DA100-612										
		C-534	Same as C-248	Plate Filter of Second Tripler Tube V-502	-482814		3DA2.400-12										
		C-535	Same as C-248	Plate Filter of First Tripler Tube V-503	-482814		3DA2.400-12										
		C-536	Same as C-248	Heater Bypass of Osc Doubler Tube V-504	-482814		3DA2.400-12										
		C-537	Capacitor: fixed, mica, 100 mmf ±5%, 500 vdcw, 51/64" max lg x 15/32" max wd x 7/32" max thk, two axial wire leads 1-1/8" lg	Screen Shunt of Osc Doubler Tube V-504	JAN CM20C-101J JAN C5		3K2010132	203	722004-523	C-537	1	1	1	1	1	2	1
		C-538	Not Used														
		C-539	Same as C-516	Grid Coupling for V-502	JAN CC30TJ-910K		3D9091-6										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-801	Capacitor: fixed paper, 1 mf, 500 vdcw, metal case, hermetically sealed, pyranol oil filled, 2-9/16" wd x 13/16" d x 2-9/16" lg, with mtg plate notched 1-15/16" between centers, two terminal soldering lugs	For Dynamotor Filter	-481852		3DB1-105	246 Cat #23F207 -G2	889896-2	C-801,802,803, 811,814	5	1	3	1	8	2	13
C-802	Same as C-801	For Dynamotor Filter	-481852		3DB1-105										
C-803	Same as C-801	For Dynamotor Filter	-481852		3DB1-105										
C-804	Capacitor: fixed, molded mica, 1500 mmf ±10%, 500 vdcw, 53/64" sq x 9/32" thk with 1-1/8" axial wire leads	For Dynamotor	JAN CM30A-152K JAN C5		3K3015211	714	722016-563	C-804,806,808	3	1	1	1	2	2	3
C-805	Capacitor: fixed, molded mica, 8200 mmf ±10%, 500 vdcw, 53/64" sq x 11/32" thk, with two axial wire leads 1-1/8" lg	For Dynamotor Filter	JAN CM35A-822K JAN C5		3K3582211	203	722025-561	C-805,810	2	1	1	1	2	2	2
C-806	Same as C-804	For Dynamotor	JAN CM30A-152K		3K3015211										
C-807	Not Used														
C-808	Same as C-804	For Dynamotor	JAN CM30A-152K		3K3015211										
C-809	Not Used														
C-810	Same as C-805	For Dynamotor Filter	JAN CM35A-822K		3K3582211										
C-811	Same as C-801	Dynamotor Filter	-481852		3DB1-105										
C-812 & C-813	Not Used														
C-814	Same as C-801	For Dynamotor Filter	-481852		3DB1-105										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
										BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
D-801	Dynamotor: plate voltage supply, 385 v dc at 500 ma 13 v dc at 21 amps, 7500 rpm, 8-5/16" max lg x 3-7/16" diam, four #10-32 tap mtg holes on 2" mtg/c, four color code leads, white, w/black tracer, white w/red tracer, white w/blue tracer	For HV and LV	-211483 C75.13 1942		3H1514-27	670	719697-1	D-801	1	1	1	2	2	2	3
D-801A	Brush and spring assem: 9/16" lg x 0.373" sq, spring 11 turns #24 BC wire formed 0.306" OD x 1-19/32" free length, marked positive	For Dynamotor D-801			3H550-26	670	889584-2	D-801A	4	1	5	2	10	2	20
D-801B	Brush and spring assem: 9/16" lg x 0.373" sq, spring 11 turns #24 BC wire formed 0.306" OD x 1-19/32" free length, marked negative	For Dynamotor D-801			3H550-26	670	889584-3	D-801B	4	1	5	2	10	2	20
D-801C	Brush and spring assem: 1/2" lg x 0.248" wd x 0.092" thk, spring 32 turns #28 BC wire formed 0.181" OD x 1-45/64" free length, marked positive	For Dynamotor D-801			3H550-27	670	889584-4	D-801C	4	1	5	2	10	2	20
D-801D	Brush and spring assem: 1/2" lg x 0.248" wd x 0.093" thk, spring 32 turns #28 BC wire formed 0.181" OD x 1-45/64" free length, marked negative	For Dynamotor D-801			3H550-27	670	889584-5	D-801D	4	1	5	2	10	2	20
D-801E	Wheel: blower, 0.412" thk x approx 3-1/8" diam, 0.2360" bore diam, two #6-32 tapped holes in hub	For Dynamotor D-801			3H370.2-9	670	889589-1	D-801E	1	1	1	2	2	2	3
E-101 to E-105	Not Used														
E-106	Terminal: strip, black molded bakelite, 7-3/8" lg x 7/8" wd x 13/32" thk, 18 terminals, 14 with links and screws engraved 1 to 14, four blanks	Connecting Remote Control			2Z9418.57	334	888968-1	E-106	1						
E-107 to E-131	Not Used														
E-132	Terminal board: black molded bakelite, 4-3/8" lg x 7/8" wd x 13/32" thk overall, four 0.161" diam mtg holes on 4-1/8" x 5/10" centers	Interconnection Terminal Board			2ZK9480-6	334 Cat. #10-140-1	430764-9	E-132, 133	2						
E-133	Same as E-132	Interconnection Terminal Board			2ZK9480-6										
E-134 and E-135	Not Used														

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP. BOX NO.	EQUIP. QUAN.	TENDER BOX NO.	TENDER QUAN.	STOCK BOX NO.	STOCK QUAN.
		E-136	Knob: micro, aluminum, 2" lg with one end 1" diam x 1/4" thk and knurled, other end with 0.1569" ID x 3/4" lg hole and outer surface cut to form gear of 14 teeth, 13/64" lg for full tooth	For Microswitch			2Z5821-113	1	888940-1	E-136	1					3	1
		E-201	Shield: tube, for type SO11 socket and 6AX5 tubes or similar, 7/8" OD x 0.810" ID x 1-3/8" h, inner spring free length 5/8", approx 3-1/2" turns	For RF Amplifier V-201	JAN SOS3 JAN S28		2Z8304.108	755	99147-1	E-201,202	2					3	2
		E-202	Same as E-201	For First Detector V-202.	JAN SOS3		2Z8304.108										
		E-203	Knob assem: aluminum, for 0.234" diam shaft, two hex socket type setscrews, #8-32 thds, 3/4" diam x 1-3/32" h x 1-1/8" d overall, shaft hole 21/32" diam, six indents equally spaced 45° apart	For Front Panel Controlling C-201			2Z5816.25	1	872497-501	E-203,401,402, 403,404	5					3	5
		E-204	Terminal assem: consisting of one thru term 15/16" lg x 3/8" diam stock and brass plate 15/16" wd x 0.125" thk, with four holes	For RF Detector Output			2Z9041.115	1	886809-501	E-204	1					3	1
		E-205	Shield: 0.020" thk aluminum, 1-1/4" h x 1-1/8" lg, with three slots 1" h x 0.020" wd, base 1/2" lg x 5/16" d, with hole 0.128" diam	For RF Interstage			2Z7093-65	1	888761-1	E-205	3					3	3
		E-206	Shield: 0.020" thk aluminum, 1-1/4" h x 1-1/8" lg, with three slots 1" h x 0.020" wd, base 1/2" lg x 5/16" d, with hole 0.128" diam	For RF Interstage			2Z7093-64	1	888761-2	E-206	3					3	3
		E-207	Not Used														
		E-208	Selector switch assem: consisting of clutch assembly lever, lever plate, shaft, push rod, locking plate, ten selector disks and spacers, nine separator disks, end plate ball bearing, plug, cage assem, base plate assem with gear, knob assem, 0 - 100, back plate and hardware	RF Selector Assembly			3Z9903A-35.1	1	881729-504	E-208	1	1	1	2	1	3	1
		E-208A	Knob assem: round, consisting of one aluminum knob, one aluminum gear and dial 0 -100 , 1.916" OD x 0.5775" thk overall, six tapped holes #4-40 thd equally spaced on 1.250" diam mtg/c	For RF Selector Tuning			2Z5816.26	1	889211-502	E-208A	1						

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL

RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS,JAN,OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		E-208B	Gear: dial, aluminum, 1.916" OD x 0.140" thk overall, 48 pitch, 1.875"pitch diam, 90 teeth, 14-1/2 degree pressure angle, six holes tapped #4-40 thd, equally spaced on 1.250" diam mtg/c	RF Selector Gear			2Z4875-148	1	433991-1	E-208B,509B	2						
		E-208C	Not Used														
		E-208D	Bearing: ball, single row, steel, grease packed, 0.3125" bore x 0.8125" OD x 0.297" wd overall	For RF Selector			3H320-57	211 #K5A	878272-4	E-208D,509D	2						
		E-208E	Disk assem: clutch, consisting of one disk plate, one stainless steel plate, three chrome steel balls, three phosphor bronze springs, one stainless steel ring assem, one brass gear, worm and one cr steel coupling, 1.7379" pitch diam x 0.343" thk overall less rivet and pin on ring assem	RF Selector Assembly			2Z3806.19	1	719604-501	E-208E,509E	2						
		E-208F	Bearing: ball, single row, extra small steel, 0.1875" bore, 0.500" OD, 0.156" wd overall	RF Selector Bearing			3HK230-7	211 #33-5	855083-8	E-208F,509F, O-1003	3						
		E-209 and E-210	Not Used														
		E-211	Bead: fish spine, 0.200" OD x 0.092" ID, approx 0.171" lg	Bead			3G1250-3.18	616 #3B	67503-3	E-211	14					3	1
		E-301	Sleeve: beryllium copper, 0.718" lg x 0.120" diam, 0.093" diam hole for 1/4" one end, other end graduated with hole 0.070" diam x 0.375" lg, 0.005" max gap slot, two holes 1/16" diam in side	Inner Conductor Terminal (Part of J-301)	RE49F188A		2Z8552-47	1	892835-2	E-301,1002	2						
		E-301A	Sleeve: beryllium copper silver-plated, 0.718" lg x 0.120" diam, 0.093" diam hole for 1/4" one end, other end graduated with hole 0.070" diam x 0.375" lg, 0.005" max gap slot, two holes 1/16" diam in sides	Spare Part for Terminal E-301			2Z8552-51	1	892835-1	E-301A,1002A	2	1	1	2	1	3	2
		E-302	Terminal board assem: .laminated phenolic sheet 1-1/2" lg x 3/4" wd x 3/32" thk, complete with two brass post type term 0.120" diam, stenciled R-302, two mtg holes 0.136" diam on 0.375" mtg/c	Terminal Board Mounting R-302	17-P-5		2Z9402.344	1	893941-504	E-302	1						

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		E-303	Terminal board assem: laminated phenolic 1-7/8" lg x 1-1/2" wd x 3/32" thk, complete with eight brass post type term 0.120" diam, stenciled R-301, R-304,L-301,R-305, two mtg holes 0.136" diam on 1.500" mtg/c	For Mounting L-301,R-301, R-304,R-305	17-P-5		2Z9408.183	1	893942-502	E-303	1						
		E-304	Terminal board assem: laminated phenolic 1-1/2" lg x 3/4" wd x 3/32" thk, complete with two brass post type term 0.120" diam, stenciled R-306, two mtg holes 0.136" diam on 0.375" mtg/c	Terminal Board Mounting R-306	17-P-5		2Z9402.346	1	893941-503	E-304	1						
		E-305	Terminal board assem: laminated phenolic 1-7/8" lg x 1-1/2" wd x 3/32" thk, complete with eight brass post type term 0.120" diam, stenciled R-307, R-308,R-309, two 0.136" diam mtg holes on 1.5 mtg/c	IF - AF Terminal Board			2Z9408.183	1	893942-501	E-305	1						
		E-306	Terminal board assem: laminated phenolic 1-1/2" lg x 3/4" wd x 3/32" thk, complete with two brass post type term 0.120" diam, stenciled R-310, two mtg holes 0.136" diam on 0.375" mtg/c	Terminal Board Mounting R-310	17-P-5		2Z9402.347	1	893941-502	E-306	1						
		E-307	Terminal board assem: laminated phenolic natural paper base term bd, 3/32" thk with 28 brass post type term 5-3/4" lg x 1-1/2" wd x 13/32" d overall, three holes 0.136" diam on 2.687" x 3/4" mtg/c, stenciled E-307	Mounting C-330,338, L-303, 304,305, R-312,313,315, 316,321,322,324,419,420, 423			2Z9428-27	1	429683-501	E-307	1						
		E-308	Board assem: laminated phenolic 1-1/2" lg x 3/4" wd x 3/32" thk, complete with two brass post type term 0.120" diam and stenciled R-323, two 0.136" diam mtg holes on 0.375" centers	Terminal Board Mounting R-323			2Z9402.348	1	893941-501	E-308	1						
		E-309	Bracket assem: consisting of one bracket 0.043" thk material, 1-1/4" h x 5/8" wd x 33/64" d, one nut, quintlock #4-40 and two thru term	For Feed Thru Capacitor C-328			2Z1243-11	1	887817-501	E-309	1					3	1
		E-310	Insulator: bushing, laminated phenolic paper base, 1/16" diam hole, shoulder 5/16" diam x 0.109" lg, shank 0.187" diam x 0.109" lg	For C-329,C-337			3G1838-3.2	1	894393-1	E-310	2					3	1

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

		PARTS										SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS,JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		E-311	Shield: side, consisting of 14 #4-40 quintlock nuts, one shield 0.040" thk aluminum PS 590 H W 9-5/8" lg x 2-63/64" wd x 2.820" h overall, 3/8" flange top and bottom with 14 mtg/nuts on 1-1/4" x 0.562" x 2.593" x 4.437" x 6.937" x 7-1/2" x 8.812" mtg/c	Separating IF From AF Section Bottom			2Z7098-31	1	433916-501	E-311	1					3	1
		E-312	Shield: side, 0.040" thk aluminum PS 590 H W 7-13/16" lg x 3" wd x 3-5/16" h overall, 3/8" flange with seven 0.147" mtg/h on 1-1/4" x 2-19/32" mtg/c	Separating IF From AF Section Top			2Z7098-30	1	433500-1	E-312	1					3	1
		E-401	Same as E-203	For Front Panel Controlling S-401			2Z5816.25										
		E-402	Same as E-203	For Front Panel Controlling S-402A,B			2Z5816.25										
		E-403	Same as E-203	For Front Panel Controlling R-432			2Z5816.25										
		E-404	Same as E-203	For Front Panel Controlling R-437			2Z5816.25										
		E-405 to E-410	Not Used														
		E-411	Terminal board assem: ten brass post type term 1/8" thk mycalex, 4" lg x 1-7/8" wd x 7/16" d, two 0.173" diam mtg holes on 3.500" centers	For Terminal Board Mounting C-404,C-405,C-411,C-413, C-415,R-409			2Z9410.143	1	893991-501	E-411	1						
		E-412	Terminal board assem: consisting of laminated phenolic bd PBE natural, 3/32" thk, 13/32" d x 1-1/2" wd x 3" lg overall, with ten post type term stenciled E-412, two 0.136" diam holes on 2.625" mtg/c	Mounting C-416,R-413,R-414, R-418,R-421			2Z9410.145	1	429683-503	E-412	1						
		E-413 to E-416	Not Used														
		E-417	Terminal board assem: laminated phenolic 3/32" thk with four brass post type term, 2-3/4" lg x 1/2" wd x 7/16" d overall, two 0.147" diam mtg holes on 1.250" centers	AF Terminal			2Z9404.256	1	888916-501	E-417	1						

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
E-501	Not Used														
E-502	Shield: tube, for type SO11 socket and one T4 tubes or similar, 7/8" OD x 0.810" ID x 1-3/8" h, inner spring free length 5/8" approx, 3-1/2" turns	For Second Tripler Tube V-502	JAN SOS6 JAN S28		2Z8320-13	755	99147-2	E-502,503	4					3	4
E-503	Same as E-502	For First Tripler Tube V-503	JAN SOS6		2Z8320-13										
E-504	Insulator: disk, ceramic steatite, 5/32" thk x 3/8" OD x 0.125" ID	For Converter Output Terminal E-505	-61602 RE13A317		3G1405-3	28	887849-1	E-504	1	1	1	2	1	3	2
E-505	Stud: terminal, brass, 15/16" lg, head 5/16" lg x 3/16" sq with #4-40 tap, 7/32" d, shank threaded 5/16" from end with #4-40 thd	For Converter Output			3Z12050-63	1	887850-1	E-505	1	1	1	2	1	3	1
E-506	Insulator: bushing, steatite, 0.375" OD x 0.125" ID x 1/4" thk, with 13/64" wd x 1/32" d slot in top	For Converter Output Terminal	-61603 JAN 1 10		3G1250-4.17	28	887863-1	E-506	1	1	1	2	1	3	2
E-507	Terminal assem: consisting of brass plate 1-1/2" lg x 1/2" wd x 0.0403" thk, two holes 0.147" diam, two holes 0.281" diam, two thru term 15/16" lg, hermetically sealed, glass insulation	For Multiplier Input			2Z9402.338.17	1	888133-501	E-507	1					3	1
E-508	Not Used														
E-509	Selector switch assem: consisting of clutch assem, lever, lever plate, shaft, push rod, locking plate, ten selector disks and spacers, nine separator disks, end plate, ball bearing, plug, cage assem, base plate assem w/gear, knob assem, 100 - 0, back plate and hardware	Multiplier Selector Assembly			3Z9903A-35.2	1	881729-507	E-509	1	1	1	2	1	3	1
E-509A	Knob assem: round, consisting of one aluminum knob, one aluminum gear and dial 100 - 0, 1.916" OD x 0.5775" thk overall, six tapped holes #4-40 thd, equally spaced on 1.250" diam mtg/c	For Multiplier Selector Tuning			2Z5816.27	1	889211-501	E-509A	1						
E-509B	Same as E-208B	Multiplier Selector Gear			2Z4875-148										
E-509C	Not Used														
E-509D	Same as E-208D	For Multiplier Selector			3H320-57										
E-509E	Same as E-208E	Multiplier Selector Assembly			2Z3806.19										
E-509F	Same as E-208F	Multiplier Selector Bearing			3HK230-7										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		E-510	Terminal board assem: consisting of a laminated phenolic natural paper base term bd 3/32" thk, with eight brass post type term, 2" lg x 1-1/2" wd x 13/32" d overall, two 0.136" diam mtg holes on 1.625" centers, stenciled E-510	Mounting L-506,R-509,R-511, R-512			2Z9408.184	1	429668-501	E-510	2						
		E-511	Terminal board assem: consisting of a laminated phenolic natural paper base term bd 3/32" thk, with four brass post type term, 1-1/4" lg x 1-1/2" wd x 13/32" d overall, two 0.136" diam mtg holes on 0.875" centers, stenciled E-511	Mounting R-513,R-523			2Z9404.257	1	429668-502	E-511	1						
		E-512	Terminal board assem: consisting of a laminated phenolic natural paper base term board 3/32" thk, with two brass post type term, 2-1/8" lg x 7/8" wd x 13/32" d overall, two 0.136" diam mtg holes on 0.750" x 7/16" centers, stenciled E-512	Mounting R-521,R-522			2Z9402.343	1	429668-503	E-512	1						
		E-513	Not Used														
		E-514 ●	Crystal oven: 24 pins, brass silver-plated, 12 v AC or DC, max overall dim 3.642" lg, 2.580" wd, 2.218" h	For Crystal	-40148		2Z6897-1	218 Dwg.#RY681-12A	433958-1	E-514	1	1	1				
		E-515 & E-516	Not Used														
		E-517	Insulation: laminated phenolic, 1/32" thk x 3-1/8" lg x 2-3/4" wd, natural paper base, four 0.147" holes on 2.625" x 1.250" x 3/4" centers	Insulation for Crystal Oven E-514			3G1838-50.9	1	888909-1	E-517	1	1	1	2	1	3	2
		E-601	Knob assem: consisting of black molded compound, knob 1-1/16" diam x 7/8" thk, w/8 equally spaced indents and pointer, brass insert 1/2" OD x 0.251" ID x 5/16" lg, two #8-32 tapped holes	Switch S-601B			2Z5821-88	1	433571-501	E-601	1					3	2

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		E-801	Terminal board assem: 12 brass post type term, laminated phenolic 3/32" thk, 7-1/2" lg x 2" wd x 21/32" thk overall, four 0.173" diam holes on 5-5/8" x 1-1/2" mtg/c	Terminal Board, Dynamotor	JAN P13			1	441621-501	E-801	1						
		E-802	Terminal board assem: four brass post type term, two brass lug type term and two phosphor bronze fuse clips, laminated phenolic 3/32" thk, 6" lg x 2" wd x 59/64" thk overall, four 0.173" diam holes on 5-1/2" x 1-1/2" mtg/c	Fuse Board	JAN P13			1	441620-501	E-802	1						
		E-803	Terminal board: black molded bakelite, 1-5/8" lg x 1-1/8" wd x 1/2" thk, four 0.173" diam holes on 1-5/16" x 7/16" centers	Dynamotor			2Z9402-44	334 Cat. #2-141	430313-1	E-803	1						
		E-804	Not Used														
		E-805	Knob: aluminum, 3/4" diam, 25/32" h, with one wing 5/8" lg, two #8-32 tap holes, one 5/8" diam hole and one 0.251" diam hole	For Switch S-802			2Z5821-112	1	441680-2	E-805	1					3	1
		E-1001	Insulator assem: consisting of one molded styramic insulator 1-3/4" diam x 1" lg, with six thru holes 0.173" diam, reamed to 0.266" diam x 11/16" depth, one brass connector 2.937" lg x 0.500" diam one end, other end swaged to 3/8" wd x 1/8" thk	Dipole			3G1912	1	439155-501	E-1001	1	1	1	2	1	3	2
		E-1002	Same as E-301	Inner Conductor Terminal (Part of J-1001)			2Z8552-47										
		E-1002A	Same as E-301A	Spare Part for Terminal E-1002			2Z8552-51										
		E-1003	Insulator: polystyrene, 0.264" lg x 0.446" OD x 0.120" ID each end	For Transmission Line Plug P-1001	RE49F188			1	892833-1	E-1003,1004	2						
		E-1004	Same as E-1003	For Transmission Line Plug P-1002													
		E-1005	Insulator: bead, styramic, 0.848" OD x 0.378" ID x 1/4" thk, 1/32" x 45° chamfer both sides of ID	Antenna Mast Bead	-61600		3G1837-8.22	1	888721-1	E-1005	1	1	1	2	1	3	2

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		E-1006	Insulator: bead, styramic, 1.125" OD x 0.253" ID x 1/4" thk	Antenna Mast Bead	-61601		3G87-6	1	888721-2	E-1006	1	1	1	2	1	3	2
		E-1007	Coupling: jack to jack, 2-1/4" lg x 17/32" diam, 5/8"-24 thds, 5/16" on coupling ends	Connects Two Antenna Cables for Extension	JAN UG-29/U JAN C71		2Z7390-29	1364	439173-1	E-1007	1			2	1	3	1
		F-801	Not Used														
		F-802	Fuse: cartridge, 1 amp, 250 v, glass body, ferrule 1/4" diam x 1-1/4" lg	For Dynamotor	17F2E		3Z1926	768 3AG1 784 1040	811485-14	F-802	1	1	10	2	20	3	50
		F-803	Fuse: cartridge, 250 v, 30 amp, renewable fiber body ferrule ends 2" lg x 9/16" diam	For Dynamotor			3Z1920	765 Cat. #7061 768 Cat. #1015 837 Cat.#F3025 743 Cat. #1010 246 Cat. #GE-1027	99108-7	F-803	1	1	10	2	20	3	50
		H-101	Not Used														
		H-102	Gasket: molded neoprene, durometer 35±3, rectangular, 20.051" lg x 8.051" wd outside x 19.051" lg x 7.051" wd inside, 21/64" thk	Receiver Panel			2Z4868.352	1	433538-1	H-102	1	1	1	2	2	2	4
		H-103	Gasket: molded neoprene, durometer 35±3, rectangular, 19.718" lg x 7.718" wd outside x 18.750" lg x 6.750" wd inside, 3/8" thk	Receiver Outer Cover			2Z4868.351	1	433538-3	H-103	1	1	1	2	2	2	4
		H-104	Gasket: molded neoprene, durometer 35±3, rectangular, 13.048" lg x 5.423" wd outside x 12.455" lg x 4.830" wd inside, 1/4" thk	Receiver Selector Panel			2Z4868-353	1	433538-5	H-104	1	1	1	2	2	2	4
		H-105 to H-115	Not Used														
		H-116	Gasket: neoprene, durometer 50, 3-13/16" lg x 2-13/16" wd x 1/4" thk, inside opening 3-1/16" lg x 2-1/16" wd, 12 holes 3/32" diam	For Front Panel			2Z4868.362	1	888782-1	H-116	1	1	1	2	2	2	4

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
H-117	Not Used														
H-118	Seal: water, neoprene, natural water, sealing washer, 1/4" OD x 1/16" ID x 3/32" diam thk	Water Seal			2Z8273-9	492	887824-15	H-118	1					2	8
H-119	Not Used														
H-120	Seal: water, neoprene, natural water, sealing washer, 1-25/64" OD, 1-13/64" ID x 3/32" diam thk	Water Seal			2Z8273-10	492	887824-17	H-120	1					2	1
H-121	Screwdriver: marine corps green enamel finish, 3-27/32" lg overall x 1/2" wd x 1/8" thk shaft, tip 1/16" thk	Screwdriver			6R18343-1	1361	887891-1	H-121	1	1	1	2	1	2	2
H-122	Not Used														
H-123	Seal: water, neoprene, natural water, sealing washer, 1-17/64" OD x 15/64" ID x 3/32" diam thk	Water Seal			2Z8273-11	113	887824-16	H-123	1					2	1
H-124	Seal: water, neoprene, natural water, sealing washer, 23/32" OD x 17/32" ID x 3/32" diam thk	Water Seal			2Z8273-14	492	887824-5	H-124	1					2	2
H-125	Seal: water, neoprene, natural water, sealing washer, 15/64" OD x 3/64" ID x 3/32" thk	Water Seal			2Z8273-19	492	887824-14	H-125	1					2	4
H-126	Wrench: Allen, short series steel, "L" shaped, 3/16" hex x 2-27/32" lg x 1-1/32" wd, for 3/8" set and 1/4" capscrews	Wrench			6R57400-1	731	828505-4	H-126	1	1	1	2	1	2	2
H-127	Wrench: Allen, short series steel, "L" shaped, 5/64" hex x 1-31/32" lg x 45/64" wd, for #8 setscrews	Wrench			6R57400	731	828505-12	H-127	1	1	1	2	1	2	2
H-128	Wrench: Allen, short series steel, "L" shaped, 1/16" hex x 1-27/32" lg x 21/32" wd, for #6 setscrews	Wrench			6R57400-6	731	828505-13	H-128	1						
H-129	Wrench: Allen, short series steel, "L" shaped, 0.050" hex x 1-17/32" lg x 21/32" wd, for #4 setscrews	Wrench			6R55499	731	828505-14	H-129	1	1	1	2	1	2	2

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
H-130	Wrench: Allen, short series steel, "L" shaped, 1/16" hex x 3-3/32" lg x 21/32" wd, for #6 setscrews	Wrench			6R57400-6.1	731	828505-15	H-130	1	1	1	2	1	2	2
H-131	Wrench: spintite, 3/16" hex x 6" lg overall wood handle, with 9/32" diam shank	Wrench			6R57413-5	906 Cat. #3406	897570-1	H-131	1	1	1	2	1	2	2
H-132	Wrench: Allen, short series steel, "L" shaped, 5/32" hex x 2-19/32" lg x 15/16" wd, for 5/16" set and #10 capscrews	Wrench				731	828505-3	H-132	1						
H-201	Spring: music wire, 0.035" diam, cadmium-plated, 9/32" ID, 5/16" free length, 3-1/2 turns, approx 3-1/2" developed lg, right-hand wound, sq ends and ground	For Mounting Cap (For Antenna Compensator Capacitor C-201)			2Z8878-126	308	865344-4	H-201,408,409, 410,602,806	6	1	6	2	12	2	24
H-202	Washer: stainless steel, 0.0187" thk x 0.406" OD, 0.252" ID	For Antenna Capacitor C-201			6L58024-14	1	868141-18	H-202,411,412, 413,603,807	12					2	12
H-203	Bushing: threaded, duraluminum, 3/4" hex x 11/32" thk w/15/32"-32 thd, center hole 0.252" diam	For Mounting Capacitor C-201			2Z1409-74	1	887271-1	H-203,604	2					2	2
H-204	Washer: neoprene, durometer hardness 50±5%, cross section 1/16" diam, 3/8" OD x 1/4" ID	For C-201 (Outer)			2Z8273-13	113	887824-1	H-204,419,420, 421,605,808	12					2	12
H-205	Washer: neoprene, durometer hardness 50±5%, cross section 1/16" diam, 21/32" OD x 17/32" ID	For C-201 (Inner)			2Z8273-12	113	887824-2	H-205,422,423, 424,425,606, 809	7					2	7
H-206	Cap: duraluminum, 11/16" hex x 1/8" one end, other end 9/16" diam x 3/8", 1/2" h overall, hex end tapped 1/4" w/15/32"-32 thds, other end with 0.257" hole	For Mounting Antenna Capacitor C-201			2Z8273-18	1	887838-1	H-206,426,432, 433,611,810	6					2	6
H-207	Clamp: aluminum, 59/64" lg x 17/32" wd x 0.031" thk overall, one hole 0.147" diam, one hole 0.281" diam	RF Detector Output Bushing			2Z7093-66	1	888136-1	H-207	1					2	1
H-208	Bushing: nickle-plated brass, 51/64" lg x 5/8" wd x 0.250" thk overall, two holes #4-40 tap x 1/8" lg, one hole 3/64" diam, shaft hole 0.250" diam	For Coupling of Antenna C-201			2Z580-39	509	888156-1	H-208	1					2	1

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		H-209	Bushing: nickle-plated brass, 0.7655" lg x 5/8" wd x 0.250" thk, one end bent up 3/16", two holes #4-40 tap x 1/8" lg, shaft hole 0.250" diam	For Coupling of Antenna C-201			2Z580-40	509	888157-1	H-209	1					2	1
		H-210	Bushing assem: consisting of glass bonded mica bushing, 0.273" lg x 3/8" diam overall, brass eyelet 0.087" diam x 0.318" lg	RF Detector Output Terminal	JAN I10		2Z1409-89	1	888177-501	H-210,510	2	1	1	2	2	2	4
		H-211	Spring: music wire, cadmium-plated, 0.032" diam, L shaped, 39/64" lg x 23/64" with one hooked-shaped anti-backlash spring	For Coupling on Ant Compensator C-201			2Z8879-167	1	888155-1	H-211	1	1	1	2	2	2	3
		H-301	Clamp assem: tube, consisting of stainless steel tube clamp and laminated phenolic insulator, 0.894" lg x 1/2" wd x 0.650" d overall	For First IF Tube V-301			2Z2642.118	1	894360-501	H-301,302,303, 304,305,430, 431	7	1	2	2	2	2	4
		H-302	Same as H-301	For Second IF Tube V-302			2Z2642.118										
		H-303	Same as H-301	For Third IF Tube V-303			2Z2642.118										
		H-304	Same as H-301	For Fourth IF Tube V-304			2Z2642.118										
		H-305	Same as H-301	For Second Detector Tube V-305			2Z2642.118										
		H-306	Clamp: aluminum, 29/32" lg x 25/32" wd x 0.091" thk overall, 0.281" diam, hole 0.406" diam x 0.062" d, counterbore two holes #6-32 tap	IF Input Bushing			2Z7093-71	1	888135-1	H-306	1					2	1
		H-307	Plate: aluminum, 29/32" lg x 25/32" wd x 0.025" thk overall, one hole 0.281" diam, two holes 0.156" diam	IF Input Bushing			2Z7091-132	1	888137-1	H-307	1	1	1	2	1		
		H-401	Clamp: steel, zinc-plated, 2-1/4" lg x 0.731" wd x 1.8125" h, two mtg slots 17/64" lg x 5/32" wd on 1.875" x 1/4" centers	For Cathode Bypass C-407			2Z2635.176	1	90545-1	H-401,402,403, 404	4					2	4
		H-402	Same as H-401	For Plate Bypass C-409			2Z2635.176										
		H-403	Same as H-401	For Bleeder Bypass C-410			2Z2635.176										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		H-404	Same as H-401	For Cathode Bypass C-414			2Z2635.176										
		H-405	Clamp: steel, zinc-plated, 2-1/4" lg x 0.731" wd x 1.000" h, two mtg slots 17/64" lg x 5/32" wd on 1.875" x 1/4" centers	For Plate Silencer C-408			2Z2635.176	1	90545-2	H-405	2					2	2
		H-406	Not Used														
		H-407	Bushing: aluminum, 9/16" thk, 3/4" wd, 1.7185" lg, 15/32"-32 thd, two holes tapped #6-32 thd	Bushing for Mounting of Silencer Control R-437			2Z580-38	1	433910-2	H-407,427,428, 434,	4					2	4
		H-408	Same as H-201	For Mounting Cap (For Silencer Switch S-401)			2Z8878-126										
		H-409	Same as H-201	For Mounting Cap (For Silencer Potentiometer R-437)			2Z8878-126										
		H-410	Same as H-201	Mounting Cap Spring (For Output Line Control Resistor R-432)			2Z8878-126										
		H-411	Same as H-202	For Silencer Switch S-401			6L58024-14										
		H-412	Same as H-202	For Volume Control Resistor R-432			6L58024-14										
		H-413	Same as H-202	For Level Control R-437			6L58024-14										
		H-414	Spring: 0.020" diam music wire, 32 turns per inch, 13/16" ID, 0.9985" OD	For Output Filter Z-402			2Z8879-133	1	894319-1	H-414	1	1	1	2	2	2	3
		H-415	Gasket: neoprene, grade FR, water seal, 0.958" OD, 0.750" ID, with hole in top 0.400" diam, 19/64" wd overall	For Water Seal Output Filter			2Z4866.10	1045 #32A41934	887545-1	H-415	1	1	1	2	2	2	4
		H-416	Water seal assem: consisting of shell and black bakelite plug button cap, hairpin loop and coil spring 1-9/32" lg x 15/16" h x 13/16" wd overall	For Output Filter			2Z8273-16	1235 Type XA 631896G1	887546-1	H-416	1	1	1	2	2	2	4
		H-417	Plate: aluminum, oval-shaped, 0.064" thk x 3/4" wd at center x 1.7185" lg, with 0.390" diam center hole and two slots 21/64" lg x 0.156" wd ea end	For Volume Control R-432			2Z7091-131	1	887814-1	H-417	2					2	2

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		H-418	Plate: aluminum, oval-shaped, 0.064" thk x 3/4" wd at center x 1.7185" lg with 0.391" diam center hole with 1/16" x 1/32" keyway and two slots 21/64" lg x 0.156" wd ea end	For Silencer Switch S-401			2Z7091-130	1	887814-2	H-418	1					2	1
		H-419	Same as H-204	For S-401 (Outer)			2Z8273-13										
		H-420	Same as H-204	For R-437 (Outer)			2Z8273-13										
		H-421	Same as H-204	For R-432 (Outer)			2Z8273-13										
		H-422	Same as H-205	For S-401 (Inner)			2Z8273-12										
		H-423	Same as H-205	For Z-402 (Inner)			2Z8273-12										
		H-424	Same as H-205	For R-437 (Inner)			2Z8273-12										
		H-425	Same as H-205	For R-432 (Inner)			2Z8273-12										
		H-426	Same as H-206	For Mounting of Silencer Switch S-401			2Z8273-18										
		H-427	Same as H-407	Bushing for Mounting of Volume Control R-432			2Z580-38										
		H-428	Same as H-407	Bushing for Mounting of Silencer Switch S-401			2Z580-38										
		H-429	Washer: flat, buna S, 0.359" ID, 3/4" OD, 0.015" thk	Water Seal, Outer of Output Filter Z-402			2Z8273-8	1	60178-15	H-429	1					2	1
		H-430	Same as H-301	For Voltmeter Rectifier Tube V-401			2Z2642.118										
		H-431	Same as H-301	For AF Output Tube V-403			2Z2642.118										
		H-432	Same as H-206	For Mounting of R-437			2Z8273-18										
		H-433	Same as H-206	For R-432			2Z8273-18										
		H-434	Same as H-407	Bushing for Mounting of Voltmeter Selector Switch S-402A,B			2Z580-38										
		H-435	Clamp: mounting, stainless steel, 1-1/4" diam plus one clip, one bracket with 3/16" x 5/16" slot, leg bent 3/4"	For V-402			2Z2642.142	961	438114-11	H-435	1	1	1	2	1	2	1

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
												BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		H-501	Not Used														
		H-502	Clamp: tube, annealed spring steel, 0.040" thk material, clamp end 7/16" wd x 9/16" lg with seven teeth 1/32" h and center slot 0.156" wd x 15/64" lg, stem end 1/8" wd x 3/4" h	For Oscillator Doubler Tube V-504			2Z2642.113	1	887827-1	H-502	1	1	1	2	1	2	1
		H-503 to H-508	Not Used														
		H-509	Ring: aluminum, oval-shaped, 1.125" lg x 0.781" wd x 0.312" h	Converter Output Shield Mounting			2Z7858-55	179	887867-1	H-509	1					2	1
		H-510	Same as H-210	For Converter Output Terminal			2Z1409-89										
		H-601	Nut: hexagon, dural, single chamfer 3/4" across flats, 1/8" thk, tapped 9/16"-28 thd	For Panel Lamp Mounting			6L2459-28	1	818983-9	H-601	1					2	1
		H-602	Same as H-201	For Mounting Cap (For Frequency Selector Switch S-601B)			2Z8878-126										
		H-603	Same as H-202	For Selector Switch S-601B			6L58024-14										
		H-604	Same as H-203	For Mounting of Selector Switch S-601B			2Z1409-74										
		H-605	Same as H-204	For S-601B (Outer)			2Z8273-13										
		H-606	Same as H-205	For S-601B (Inner)			2Z8273-12										
		H-607	Washer: neoprene, durometer 50, cross section 1/16" diam x 3/4" OD x 5/8" ID	For Panel Lamp			2Z8273-17	113	887824-3	H-607	1					2	1
		H-608	Lens: indicator, light-clear, threaded 1/16" thk, water-clear plexiglas, 7/8" lg x 13/16" hex, 5/8"-27 thd, 3/16" lg aluminum natural finish lens, w/down reflector	For Panel Lamp			2Z5991-72	780	896537-1	H-608	1	1	1	2	1	2	1
		H-609	Cap: brush holder, brass cadmium-plated 0.140" thk x 5/16" diam, 32 thds per inch with 3/64" sq slot in head	For Selector Motor B-602			3H683-39	1358 Dwg. #X2486A	889891-1	H-609	1	1	2	2	4	2	6
		H-610	Not Used														
		H-611	Same as H-206	Cap for Mounting of Selector Switch S-601B			2Z8273-18										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO:	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
												BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		H-612	Lubricant: 4 oz oil, Univis #60 in 4 oz screw top container	For Univis #60			6G1398.6	1	427916-501	H-612	1	1	1	2	2	2	3
		H-613	Cap assem: consisting of one amphenol cap and 3" #10 nickel silver bead chain, cap 1-1/2" diam x 7/16" wd, similar to amphenol cap and chain 9760-22 tapped w/1-3/8"-18 thds, including one neoprene washer 3/32" thk	For Connector Z-604			2Z1612.13	701	433921-2	H-613	1					2	1
		H-614	Sleeve: 1.375" OD diam x 1.253" ID diam x 0.828" lg, 1-3/8"-28 thd, 3/8" on one end, flange 1-5/8" x 1-5/8" x 3/16" thk on other end, with four 0.106" diam taper, counterbore 0.143" diam x 0.015" d holes on 1.250" centers	Sleeve for Connector Z-604				1	889252-2	H-614	1						
		H-615	Plate: 1-5/8" lg x 1-5/8" wd x 1/8" thk, aluminum alloy, five tapered holes, four 0.156" diam to 0.310" diam on 1.250" centers, one 1.253" diam to 1.394" diam hole on 13/16" centers	For Connector Z-604				1	889248-1	H-615	1						
		H-616	Nut: knurled, aluminum alloy, 1-1/2" OD x 1-1/8" ID x 7/16" thk overall, 1/32" x 45° chamfer on outside corners, 1-1/4"-28 thd, 5/16" d	For Connector Z-604				1	889253-1	H-616	1						
		H-617	Sleeve: 1.250" OD x 1.128" ID x 7/16" ID diam x 0.828" lg, 1-1/4"-28 thd, 3/8" on one end, flange 1-1/2" x 1-1/2" x 3/16" thk on other end, with four 0.106" diam taper, counterbore 0.143" diam x 0.015" d holes on 1.148" centers	Sleeve for Connector Z-603				1	889251-2	H-617	1						
		H-618	Plate: aluminum alloy, 1-1/2" sq x 1/8" thk, one hole 1.128" diam w/45 peg chamfer, four holes 0.156" diam w/45 deg countersunk on 1.156" sq mtg/c	For Connector Z-603				1	889249-1	H-618	1						
		H-619	Nut: knurled: aluminum alloy, 1-3/8" OD x 1" ID x 7/16" thk overall, 1/32" x 45° chamfer on outside corners, 1-1/4"-28 thd, 5/16" d	For Connector Z-603				1	889250-1	H-619	1						
		H-801 to H-805	Not Used														
		H-806	Same as H-201	For Mounting Cap (For ON-OFF Switch S-802)			2Z8878-126										
		H-807	Same as H-202	For ON-OFF Switch S-802			6L58024-14										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS				
												EQUIP.		TENDER		STOCK
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		H-808	Same as H-204	For S-802 (Outer)			2Z8273-13										
		H-809	Same as H-205	For S-802 (Inner)			2Z8273-12										
		H-810	Same as H-206	For ON-OFF Switch S-802			2Z8273-18										
		H-1001	Washer: flat ankoprene 6850/C1, durometer hardness 40-50, 15/16" ID x 1-5/32" OD x 1/16" thk	For Antenna Capacitor A-1001			2A3196.1-2	37	60178-23	H-1001	1	1	1	2	2	2	4
		H-1002	Gasket: ankoprene 6850/C1, durometer 40-50 1-7/8" OD x 1-3/8" ID x 1/16" thk, four holes 0.140" diam equally spaced	For Antenna Mast Junction			2A3196.1-4	37	888590-1	H-1002	1	1	1	2	2	2	4
		H-1003	Gasket: ankoprene 6850/C1, durometer 40-50 1-7/16" OD x 15/16" ID x 1/16" thk, six holes 0.140" diam equally spaced	For Dipole Junction			2A3196.1-3	37	888591-1	H-1003	1	1	1	2	2	2	4
		H-1004	Nut: brass, 5/16" hex x 1/4" lg, tapped 1/4"-28 thd	For Antenna Line			6L3504-28-5.7	1	888706-1	H-1004	1					2	1
		H-1005	Gasket: ankoprene 6850/C1, durometer 40-50 1" sq x 1/32" thk, 5/8" diam hole in center, 0.125" diam hole ea corner	Mast Base Connector			2A3196.1-1	1	888720-1	H-1005	1	1	1	2	2	2	4
		H-1006	Screw ring: aluminum, 1.250" OD x 0.875" ID x 0.218" thk, 1-1/4"-12 thd	Antenna Support Ring			6L7937-3AL	1	888722-1	H-1006	1					2	1
		H-1007	Not Used														
		H-1008	Wrench: cr steel, 3-15/32" lg x 1/8" thk x 1-3/32" wd, with 1/2" x 1/4" cutout one end, other end 1/8" diam for 1/2"	Dipole Spanner			6R57522-4	1	880981-1	H-1008	1	1	1	2	1	2	2
		HS-401	Headset assem: consisting of two headphones, plug and adjustable band plug, 3-1/8" lg, for use with extension cord Navy Type CW-49534	Headset	-49507		2B955	669	433938-1	HS-401	1	1	1	2	4	2	8
		I-601	Lamp: 6-8 v, 0.15 amp, 0.94 watt, bulb T 3-1/4 clear, miniature bayonet base, 1-1/8" lg overall	For Filament Indicator			2Z5952	246 Mazda 47	61114-22	I-601	1	1	2	2	4	2	6

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
J-201	Receptacle: with bakelite insulator molded over terminal, 0.0225" diam hole 11/64" d in terminal, 3/8"-32 thd, 11/16" sq x 0.780" lg, four holes 0.102" diam, 0.500" on centers, same as A/N type UG 87/U, except for 0.102" diam holes, molded insulator and hole in terminal	Receiver Input	AN-UG-87/U		2Z7390-87	1	433908-1	J-201	1	1	1	2	1	3	2
J-301	Connector jack assem: female contact, brass shell silver-plated, 0.957" lg x 3/4" diam overall, mtg plate near centers 1" sq with four mtg holes 0.0120" diam on 23/32" centers	Antenna Panel	AN-UG-281/U RE49F188A		2Z7390-281	1	439193-501	J-301	1	1	1	2	1	3	2
J-1001	Jack assem: consisting of polystyrene insulator, 0.446" OD x 0.123" ID x 0.264" thk, steel silver-plated plate 1" sq x 0.075" thk, with four 0.120" mtg holes on 23/32" x 23/32" mtg/c, and brass silver-plated fittings with 35 pitch straight knurl and 5/8"-24 thd OD	Antenna Input Jack	AN-UG-58/U RE49F188 AN JAN C71		2Z8276-38	699	438110-506	J-1001	1	1	1	2	1	3	2
K-601	Relay: armature, coil 12 v, 250 ohms contacts 2 form C pileups, closed in one direction when coil not energized to open before making contact on other side when coil is energized nitrogen filled, hermetically sealed case 2-3/16" lg x 1.102" wd x 1.508" h, eight term extending 5/8", stenciled 1 to 8, three mtg studs #8-32 thds x 5/16" lg	Selector Control	-29726		2Z7585-188	713 Type SK-13001	429680-1	K-601	1	1	1	1	2	2	3
K-602	Not Used														
K-603	Relay: voltage regulator, hermetically sealed, nitrogen filled, coil 2900 ohms ±5% d-c resistance, one form B contact normally closed, open when energized, contacts to operate at 190 v ±10 v, 2-11/16" lg x 1-3/8" wd x 1-3/4" h, eight term extending 7/8" stenciled 1 to 8, three mtg studs #6-32 thds	Voltage Regulator	-29727		2Z7585-157	713 Type SK-13002	429680-2	K-603	1	1	1	1	2	2	3

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		L-201	Wire: bare, copper, #20 AWG, soft tinned, 4" lg	RF Tuning (Part of Wiring)				1	618528-23	L-201	1						
		L-202	Coil: radio, RF, 19/32" lg x 7/16" wd x 3/8" thk, four turns RH wound #20 AWG tinned copper wire, 1/4" OD, 5/64" pitch (Part of C-203)	RF Tuning			3C1084H-19	1	889845-1	L-202, 205, 208, 211	4						
		L-203	Wire: bare, copper, #20 AWG, soft tinned, 1-1/8" lg	RF Tuning (Part of Wiring)				1	618528-28	L-203	1						
		L-204	Wire: bare, copper, #20 AWG, soft tinned, 3-5/8" lg	Grid Tuning of RF Amplifier Tube V-201				1	618528-24	L-204	1						
		L-205	Same as L-202	Grid Tuning of RF Amplifier Tube V-201													
		L-206	Wire: bare, copper, #20 AWG, soft tinned, 1-1/8" lg	Grid Tuning Amplifier Tube V-201 (Part of Wiring)				1	618528-29	L-206	1						
		L-207	Wire: bare, copper, #20 AWG, soft tinned, 4" lg	Plate Tuning of RF Amplifier Tube V-201				1	618528-25	L-207	1						
		L-208	Same as L-202	Plate Tuning of RF Amplifier Tube V-201													
		L-209	Wire: bare, copper, #20 AWG, soft tinned, 1-1/8" lg	Plate Tuning of RF Amplifier Tube V-201 (Part of Wiring)				1	618528-30	L-209	1						
		L-210	Wire: bare, copper, #20 AWG, soft tinned, 3-1/2" lg	Grid Tuning of First Detector Tube V-202				1	618528-26	L-210	1						
		L-211	Same as L-202	Grid Tuning of First Detector Tube V-202													
		L-212	Wire: bare, copper, #20 AWG, soft tinned, 1-1/8" lg	Grid Tuning of First Detector Tube V-202				1	618528-31	L-212	1						
		L-213	Wire: bare, copper #20 AWG, soft tinned, 3-1/2" lg	Plate Tuning of Tripler Tube V-203				1	618528-27	L-213	1						
		L-214	Coil: radio, RF, 19/32" lg x 7/16" wd, 3/8" thk, three turns RH wound #20 AWG tinned copper wire, 1/4" OD	Plate Tuning of Tripler Tube V-203			3C1084-18	1	889845-2	L-214	1						
		L-215	Wire: bare, copper, #20 AWG, soft tinned, 1-1/4" lg	Plate Tuning of Tripler Tube V-203				1	618528-32	L-215	1						
		L-216	Not Used														

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP. BOX NO.	EQUIP. QUAN.	TENDER BOX NO.	TENDER QUAN.	STOCK BOX NO.	STOCK QUAN.
L-217	Coil: radio, RF assem, integral type, single winding unshielded, 8-1/4" turns #20 AWG tinned copper wire assembled on co-polymer of styrene coil form with brass bushing, 1-1/2" lg x 29/32" wd x 3/8" thk overall	Grid Ammeter Filter of Tripler Tube V-203			3C1084H-20	1	889883-501	L-217	1			2	1	3	1
L-218	Coil: RF, choke, integral type, single winding, single layer wound, unshielded, 16 turns #24 AWG E wire, body approx 3/8" lg x 3/32" ID, air wound, 3/4" lg axial wire leads	RF Choke			3C370-85	1	8855989-1	L-218	1	1	1	2	2	3	3
L-301	Coil: radio, RF, choke; integral type, molded, 45 turns #30 AWG E copper wire, natural resonant frequency above 50 mc, impedance 500 ohms at 50 mc, 0.3 ohms max d-c resistance, 15/16" lg x 1/4" diam overall, two axial leads 1-15/16" lg each, core 5/8" lg x 3/16" diam	For First IF Tube V-301	-47810 JAN R11		3C1084H-23	795	888776-1	L-301, 302, 303, 304, 305, 506, 509	7	1	7	2	14	3	21
L-302	Same as L-301	For Second IF Tube V-302	-47810		3C1084H-23										
L-303	Same as L-301	For Third IF Tube V-303	-47810		3C1084H-23										
L-304	Same as L-301	For Fourth IF Tube V-304	-47810		3C1084H-23										
L-305	Same as L-301	For Second Detector Tube V-305	-47810		3C1084H-23										
L-501	Not Used														
L-502	Coil: radio, RF, inductor 2nd tripler tuning, single winding, single layer wound, unshielded, two turns of 0.032" thk x 1/4" wd copper, 3/8" pitch, formed 0.498" ID, 1-1/4" approx overall diam x 3-5/16" approx overall lg	Plate Tuning of Second Tripler Tube V-502			3C1084H-22	1	727334-502	L-502	1	1	1	2	2	3	3
L-503	Not Used														
L-504	Transformer assem: enclosed in shield can, consisting of coil 30 turns #18 AWG copper wire, with an adjustable iron core assem bottom end, overall dim 1.375" sq x 3.389" h, excluding term at top and core assem bottom	Plate Coil of Oscillator Doubler Tube V-504	-47937		3C1084H-27	1	618106-507	L-504	1	1	1	2	2	3	3
L-505	Not Used														
L-506	Same as L-301	For Oscillator Doubler Tube V-504	-47810		3C1084H-23										
L-507	& L-508 Not Used														
L-509	Same as L-301	For First Tripler Tube V-503	-47810		3C1084H-23										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

		PARTS										SPARE PARTS					
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
												BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		L-510	Coil: RF, choke assem, universal wound three pies, 125 turns ea, 4 crosses per turn #39 AWG silk covered enameled copper wire, wound on iron core, wrapped w/two layers of 1/2" tape, core w/#4-40 tapped stud, 1-1/4" lg x 0.246" diam overall, one laminated phenolic term board 15/16" lg x 5/16" wd x 3/32" thk, w/two post type term	RF Choke	-471709		3C370-84	1	899941-501	L-510	1						
		L-801	Not Used														
		L-802	RF: choke, winding housed internally in mold with 1-3/8" leads 0.030" diam ea end, body 3/4" lg x 1/4" OD, 29 turns #24 AWG wire close wound	For RF Dynamotor	-47871		3C370-81	795 Type CF #170	889568-2	L-802,803	1	1	2	2	4	3	6
		L-803	Same as L-802	Dynamotor RF Choke	-47871		3C370-81										
		M-401	Meter: output 0 - 10 ma, dc 100 ohms 0.001 ±2%, full scale amps, 1-3/4" sq x 19/64" thk mtg flange, four mtg holes 1.312" between centers x 13/16" max thk, dull black dial white markings, four 0.125" diam holes on 1.312" sq mtg/c	Zero to 1 Milliampere DC	-22504 C39-2		3F901-20	246 8DN-1	430715-1	M-401	1					3	1
		O-101	Gear: worm, stainless steel, 48 pitch 0.333" pitch diam, single thread, RH, 14-1/2 deg pressure angle, 0.065" lead, 3° 35' thread angle, 17/32" minimum lg of full thread, 0.373" OD x 0.1879" ID x 11/16" lg	Selector Drive			2Z4872-76	508	872512-1	O-101	3			1	3	3	6
		O-102	Bearing: needle, steel, 11/32" overall diameter x 3/16" shaft diam x 1/4" lg	Selector Drive Shaft Horizontal Needle			3H321-53	863 Type GB34X	886818-1	O-102,103	2			1	4	3	4
		O-103	Same as O-102	Selector Drive Shaft Vertical Needle			3H321-53										
		O-104	Shaft: stainless steel, 12" lg x 0.1876" diam	Selector Drive Horizontal			2Z8203-132	1	886874-1	O-104	1					3	1
		O-105	Collar: stainless steel, 1/4" thk x 3/8" OD with 1/4" x 1/16" hub, 0.1879" ID, one 0.047" diam hole thru one side only, and one tapped hole #4-40 thds	Selector Drive Horizontal Collar			2Z2935-33	1	886876-1	O-105	4					3	4
		O-106	Gear: bevel drive, stainless steel, 48 pitch, 78 teeth, 1.625" pitch diam, 14-1/2 deg pressure angle, 1.667" overall diam, with 7/16" diam hub, 0.281" overall width at hub	Main Selector Drive			2Z4872-75	695	887260-1	O-106	1			1	1	3	1

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		O-107 to O-119	Not Used														
		O-120	Gear: spiral, hardened steel, 0.393" OD x 0.1879" diam center hole x 0.375" lg, RH, 8 teeth, 24 diametral pitch, pitch diam 0.3333" tooth angle 45°, pressure angle 14-1/2 deg	Selector Spiral Gear			2Z4872-77	1	886861-1	O-120	1			1	1	3	2
		O-121 to O-124	Not Used														
		O-125	Collar: stainless steel, 3/8" OD x 0.1879" ID x 0.316" thk, #4-40 tap hole inside, 0.047" diam hole thru one side only	Selector Drive			2Z2935-36	1	886875-1	O-125	2					3	2
		O-126	Coupling: assembly, consisting of a bushing, plate, spring and pin, 1-5/8" diam x 3/8" thk, 0.250" diam shaft hole	For A-101			3H1290.3-2	1	888751-501	O-126	1			1	1	3	2
		O-127	Spring: music wire, finish black, 0.035" diam, triangular-shaped 7/16" x 13/32" x 3/8"	Retainer Spring for O-501			2Z8877.153	1	888937-1	O-127	1	1	1	1	2	3	5
		O-128	Not Used														
		O-129	Shaft: stainless steel, 7-5/8" lg x 0.1876" diam	Selector Drive Shaft			2Z8203-162	1	890159-18	O-129	1					3	1
		O-201	Coupling: flexible drive, duralumin, 3/8" OD x 0.1875" ID x 1-1/8" lg	For Drive of C-201			2Z3373-78	86 T41	868655-4	O-201	1			1	1	3	2
		O-202	Shaft assembly: consisting of two dural shafts 1-3/32" lg x 0.187" diam, laminated insulated coupling 1" lg x 7/16" diam, with 0.1875" hole 13/32" d each end, two steel screws #6-32 x 1/8" lg, two stainless steel taper pins #6-0 x 1/2" lg, 2-13/32" overall length	For Antenna Compensator Capacitor C-201			2Z3273-83	1	888104-501	O-202	1			1	1	3	1
		O-203	Gear assembly: consisting of aluminum support with two 1/2" diam hubs, two stainless steel shafts, one 1" lg x 0.1871" diam, other 29/32" lg x 0.2496" diam overall, two brass miter gears, 3/8" pitch diam, face 7/64", 48 pitch, 18 teeth, four setscrews 1/8" lg, #4-40	Drive for Antenna Capacitor C-201			2Z4872-72	1	888125-501	O-203	1			1	1	3	1

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		0-203A	Gear: miter, brass, 3/8" pitch diam, 7/64" face, 48 pitch, 18 teeth, shaft 0.125" diam, 17/64" d, two #4-40 tapped holes in side	For Drive Meter Gear			2Z4878-123	86 Cat.#53-G-461	888124-1	0-203A	2						
		0-203B	Gear: miter, brass, 3/8" pitch diam, 7/64" face, 48 pitch, 18 teeth, 5/16" OD, 0.125" bore diam, 17/64" lg overall	For Meter Drive			2Z4872-82	86 Cat.#53G461	882185-1	0-203B	1						
		0-204	Gear: aluminum: 0.7916" OD x 5/16" thk, 0.7500" pitch diam, 48 diametral pitch, 36 teeth, 14-1/2 deg pressure angle, hub 7/16" diam, bore 0.1875" diam	RF Tuning Condenser			2Z4875-143	1	888528-2	0-204	1			1	1	3	1
		0-205	Gear assembly: consisting of aluminum gear, 0.7916" OD x 0.249" thk, 0.7500" pitch diam, 48 diametral pitch, 36 teeth, 14-1/2 deg pressure angle, hub 5/16" diam, bore 0.1875" diam, stainless steel plate 0.032" thk stock, 15/64" wd x 37/64" lg to center of mtg holes	For RF Tuning Condenser C-203			2Z4872-71	1	888548-501	0-205	1			1	1	3	1
		0-206	Coupling assembly: consisting of two plate assem, bushing, shim and spring, approx 1-1/2" OD x 0.253" OD x 0.3085" thk	Receiver RF Coupling			2Z3273-75	100	433932-501	0-206	1			1	1	3	1
		0-207	Shaft: stainless steel, PS #521, 1-25/64" lg x 0.2496" diam overall, 1/64" x 45° chamfer both ends, 9/64" lg x 0.187" left end, one undercut of 1/16" wd x 0.010" d, 17/64" from left end	To Connect Front Panel Knob with Capacitor C-201			2Z8203-161	1	887214-1	0-207	1					3	1
		0-208	Gasket: neoprene, durometer #50 blk, 1/16" thk x 1-13/16" sq, 1-31/64" diam hole in center, four 3/32" diam holes on 1-5/16" sq mtg/c	For Front Panel Under Meter M-401			2Z4868.513	1	889575-1	0-208	1	1	1	1	2	3	4
		0-209	Dryer air assembly: consisting of silica gel crystals complete with sealed-in box 4" lg x 2" wd x 9/16" thk overall w/adhesive tape, w/mica indicating window	For Silica Gel	-10495 51S32		2Z3602-18	1 Grade D	888713-501	0-209	2			1	2	3	4
		0-501	Gear assembly: consisting of two gears, stainless steel, 1.500" pitch diam, 48 diametral pitch, 72 teeth, 14-1/2 deg pressure angle 0.037" thk x 1.5416" OD, complete w/stainless steel pin, one gear w/0.3745" OD hole, other w/0.314" hex hole for shaft, shim, spring and hub, stainless steel, 1/2" OD x 0.250" ID x 0.392" lg overall	Multiplier Tuning Condenser			2Z4872-74	1	433931-501	0-501	1			1	1	3	1

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		O-502	Gear assembly: consisting of two gears, stainless steel 1.500" pitch diam, 48 diametral pitch 72 teeth, 14-1/2 deg pressure angle, 0.037" thk x 1.5416" OD, complete with stainless steel pin, one gear with 0.3745" OD hole, other with 0.314" hex hole for shaft, shim, spring and bushing, stainless steel 1/2" OD x 0.253" ID x 0.328" lg overall, size 1.5416" diam x 0.328" thk	Multiplier Tuning Condenser			2Z4872-73	1	433931-502	O-502	1			1	1	3	1
		O-503	Gear: aluminum, 2.5416" OD x 0.375" thk, 2.500" pitch diam, 48 diametral pitch, 120 teeth, 14-1/2 deg pressure angle, hub 7/16" diam, bore 0.1874" diam, six holes 1/2" diam on 1-1/4" centers	For Multiplier Tuning Condenser			2Z4875-142	695	888529-1	O-503	1			1	1	3	1
		O-504	Shaft: stainless steel, 5/8" lg x 5/16" diam overall, with 0.1562" diam x 3/32" lg hole one end	Multiplier Tuning Condenser			2Z8202.67	1	888524-1	O-504	1					3	1
		O-505 to O-507	Not Used														
		O-508	Coupling assembly: consisting of two plate assem, bushing, shim and spring, approx 1-1/2" diam x 0.376" thk	Multiplier Driver			2Z3273-76	1	433932-502	O-508	1			1	1	3	1
		O-509	Spring: lock, music wire PS 45, 0.0317" diam, 5/32" lg w/1/32" rad, 15/64" lg w/1/64" rad, triangular shape	For Plate Tuning Inductor L-502			2Z8877.152	1	75969-2	O-509	1	1	1	1	2	3	5
		O-601	Coupling assembly: consisting of stainless steel shaft 31/32" lg x 0.249" diam, with cap 5/8" diam x 0.062" thk, stainless steel coupling disk 0.032" thk stock, 1-5/8" diam x 1/4" h	For Selector Switch S-601B			2Z3273-77	1	888752-501	O-601	1			1	1	3	1
		O-602	Bearing: ball, 0.8659" OD, 0.27545" ID, 0.2731" wd with seven balls 5/32" diam each	For Selector Motor B-602			3H304-9	439 #77037	885655-7	O-602	1	1	1	1	1	3	1
		O-603	Not Used														
		O-604	Bearing: ball, single row, radial shield steel, bore 0.2362" x 0.7480" overall x 0.2362" wide overall	For Dynamotor D-801			3H1787A/6	439 BRG #7036	885824-3	O-604	1	1	5	1	10	3	20
		O-605 to O-609	Not Used														

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		0-610	Gear: pinion, stainless steel, 48 pitch, 12 teeth 0.2500" pitch diam, 14-1/2 deg pressure angle, 3/16" face, 0.2916" OD x 1.270" lg overall	For Selector Drive			2Z4878-125	508	889841-1	0-610	1						
		0-611	Gear: stainless steel, 48 pitch, 36 teeth, 0.750" pitch diam, 14-1/2 deg pressure angle, 1/8" face, 0.7916" OD x 11/32" thk overall, bore 0.1875" diam, tapped hole #4-40 thd for setscrew and other hole 0.063" diam	For Selector Drive Motor			2Z4878-124	1	889843-1	0-611	1						
		0-612	Not Used														
		0-613	Bearing: ball, 0.6297" OD x 0.15735" ID x 0.1944" wd with six 1/8" diam balls	For Commutator End of Selector Motor B-602				439 77034	885655-8	0-613	1						
		0-614	Gear assem: homing switch drive, consisting of one aluminum plug, one stainless steel shaft, one Fafnir 33-5 ball bearings, one back plate, one clutch assem, one base plate assem, one cage assem, and four stainless steel spacers, with four stainless steel mtg plugs on 1.546" x 1.546" mtg/c, 1.889" sq x 2.312" lg overall, excluding mtg studs	Homing Switch Drive			2Z4872-110	1	728108-501	0-614	1	1	1	1	1	3	1
		0-801	Bearing: ball, single row, radial double shield steel 0.4998" OD x 0.18735" ID x 0.1944" wd with seven 3/32" diam balls	For Commutator End of Dynamotor D-801				439 7R3	885655-9	0-801	1						
		0-1001	Gear assembly: consisting of one aluminum die casting bracket, four Fafnir Co. Cat. 33-5 ball bearings, one stainless steel shaft 2-15/32" lg, 0.1874" diam w/5/16" diam collar spaced 9/16" from one end, one stainless steel shaft 1-13/16" lg, 0.1874" diam w/5/16" diam, collar spaced 5/8" from one end, one stainless steel gear 36 teeth, 48 diametral pitch, 0.750" pitch diam, 63° 26' pitch angle, 23° 43' face angle, 0.768" OD, one stainless steel gear, 18 teeth, 48 diametral pitch, 0.375" pitch diam, 26° 34' pitch angle, 60° 35' face angle, 0.411" OD, one stainless steel collar 7/16" OD x 1/4" thk, one stainless universal joint 3/8" diam x 1-1/8" lg overall, one aluminum alloy gear 36 teeth, 0.750" pitch diam, 0.7916" OD, 48 diametral pitch, 14-1/2 deg pressure angle w/five steel taper pins and six steel setscrews approx 2-7/16" wd x 2-1/8" h x 15/16" lg overall	Antenna Gear			2A1177-14	1	439121-501	0-1001	1						

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
O-1002	Gear assem: consisting of laminated phenolic gear and aluminum hub, 0.750" diam pitch 0.7916" OD, 36 teeth, 48 diametral pitch, 14-1/2 deg pressure angle, 0.843" diam x 3/8" lg overall, bore 0.1877" diam, one hole tapped #4-40 thd, other hole 0.063" diam	Antenna Drive			2A1178-24	1	895034-501	O-1002	1						
O-1003	Same as E-208F	Antenna Compensator Shaft Bearing			3HK230-7										
O-1004	Gear: miter, stainless steel, 48 pitch, 18 teeth, 0.3750" pitch diam, pressure angle 14-1/2 deg, 21/64" lg, bore 0.1875", one hole tapped #4-40 thd, other hole 0.047" diam	For Antenna Drive			2A1178.8	1	895023-1	O-1004	1						
P-201	Connector: male contact, one pin contact straight, 0.482" diam x 1.655" lg overall	Receiver Antenna Cable	AN UG85/U RE49F243		2Z7390-85	699	719230-2	P-201	1	1	1	2	1	3	2
P-601	Connector assem: female contact, consisting of connector type AN 3106-20-6S adapter type AN 3055-22-8, and cable clamp AN 3057-8, 2-3/4" lg x 1-15/32" OD approx overall	Plug for Z-603			2Z3064-92	1	897738-501	P-601	1	1	1	2	1	3	2
P-801	Connector: female contact, two round contacts, for AWG wire #4, 1-23/32" diam x 2-1/4" lg, one end tapped 1-1/2"-18 thds and other end 1-7/16"-18 thds, key position #1	Battery to Dynamotor Cable	AN 3106-24-9S AN-WC-591		2Z3063-6	1	433957-3	P-801	1						
P-802	Connector: female contact, three round contacts for AWG #12 wire size and six round contacts for AWG #20 wire size, 1-19/32" OD x 2-1/8" lg overall, key position 1, one end 1-3/16"-18 thds, other end tapped 1-3/8"-18 thd	Connector for Power Supply Cable	AN 3106-22-16S AN-WC-591		2Z3064-85	30	433957-2	P-802,803	2	1	1	2	1	3	2
P-803	Same as P-802	Connector for Power Supply Cable	AN-3106-22-16S		2Z3064-85										
P-1001	Plug assembly: pin-type, consisting of brass and silver-plated body pin adapter, sleeve, splicer and two nuts, including one neoprene insulator and two neoprene gaskets, overall dimension 3/4" x 11/16" x 1.952" lg	For Transmission Line	JAN UG-21/U RE49F 188A		2Z3021-146	1364	438109-501	P-1001,1002	2	1	2	2	4	3	8
P-1002	Same as P-1001	For Transmission Line	JAN UG-21/U		2Z3021-146										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
										BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-201	Resistor: fixed, composition, 0.22 meg ±10%, 1/2 watt, insulated, small, 0.468" max lg, 0.249" max diam, two axial wire leads 1-1/2" lg	Grid Filter of Amplifier Tube V-201	JAN RC20BF-224K JAN R11		3RC20BF224K	722	722318-90	R-201,205,206, 322,403,409	6	1	3	1	18	3	30
R-202	Resistor: fixed, composition, 3300 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Grid of RF Amplifier Tube V-201	JAN RC20BF-332K JAN R11		3RC20BF332K	722	722318-68	R-202	1	1	1	1	3	3	5
R-203	Resistor: fixed, composition, 56,000 ohms ±10%, 1 watt, insulated, small 0.750" max lg x 0.280" max diam with two axial wire leads 1.5" lg	Screen Dropping of RF Amplifier Tube V-201	JAN RC30BF-563K JAN R11		3RC30BF563K	722	722333-83	R-203	1	1	1	1	3	3	5
R-204	Resistor: fixed, composition, 1500 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Plate of RF Amplifier Tube V-201	JAN RC20BF-152K JAN R11		3RC20BF152K	722	722318-64	R-204,320,405, 506	4	1	2	1	12	3	20
R-205	Same as R-201	Grid Filter of First Detector Tube V-202	JAN RC20BF-224K		3RC20BF224K										
R-206	Same as R-201	Grid of First Detector Tube V-202	JAN RC20BF-224K		3RC20BF224K										
R-207	Resistor: fixed, composition, 33,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Grid of Tripler Tube V-302	JAN RC20BF-333K JAN R11		3RC20BF333K	722	722318-80	R-207, 531	2	1	1	1	6	3	10
R-208	Resistor: fixed, composition, 0.33 meg ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Screen Dropping of First Detector Tube V-202	JAN RC20BF-334K JAN R11		3RC20BF334K	722	722318-92	R-208	1	1	1	1	3	3	5
R-209	Resistor: fixed, composition, 10,000 ohms ±10%, 1 watt, insulated, small, 0.750" max lg x 0.280" max diam, two axial wire leads 1.5" lg	Plate Shunt of Tripler Tube V-203	JAN RC30BF-103K JAN R11		3RC30BF103K	722	722333-74	R-209,213	2	1	1	1	6	3	10
R-210	Resistor: fixed, composition, 270 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Cathode of RF Amplifier Tube V-201	JAN RC20BF-271K JAN R11		3RC20BF271K	722	722318-55	R-210,212,303, 307,311,314	6	1	3	1	9	3	30
R-211	Resistor: fixed, composition, 1000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Cathode of First Detector Tube V-202	JAN RC20BF-102K JAN R11		3RC20BF102K	722	722318-62	R-211	1	1	1	1	3	3	5

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS									SPARE PARTS						
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
										BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-212	Same as R-210	Cathode of Tripler Tube V-203	JAN RC20BF-271K		3RC20BF271K										
R-213	Same as R-209	Plate Filter of First Detector Tube V-202	JAN RC30BF-103K		3RC30BF103K										
R-301	Resistor: fixed, composition, 50,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg, 0.249" max diam, two axial wire leads 1-1/2" lg	Plate Filter of First Detector Tube V-202 (Part of Terminal Board E-303)	JAN RC20BF-563K JAN R11		3RC20BF563K	722	722318-83	R-301,420	2	1	1	1	6	3	10
R-302	Resistor: fixed, composition, 0.10 meg ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Grid Filter of First IF Tube V-301 (Part of Terminal Board E-302)	JAN RC20BF-104K JAN R11		3RC20BF104K	722	722318-86	R-302,306,310, 401,402,413	6	1	3	1	9	3	30
R-303	Same as R-210	Cathode of First IF Tube V-301	JAN RC20BF-271K		3RC20BF271K										
R-304	Resistor: fixed, composition, 2200 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Screen Dropping of First IF Tube V-301	JAN RC20BF-222K JAN R11		3RC20BF222K	722	722318-66	R-304,305,308, 309,312,313, 315,316,408, 509	10	1	5	1	30	3	50
R-305	Same as R-304	Plate Dropping of First IF Tube V-301	JAN RC20BF-222K		3RC20BF222K										
R-306	Same as R-302	Grid Filter of Second IF Tube V-302 (Part of Terminal Board E-304)	JAN RC20BF-104K		3RC20BF104K										
R-307	Same as R-210	Cathode of Second IF Tube V-302	JAN RC20BF-271K		3RC20BF271K										
R-308	Same as R-304	Screen Dropping of Second IF Tube V-302	JAN RC20BF-222K		3RC20BF222K										
R-309	Same as R-304	Plate Dropping of Second IF Tube V-302	JAN RC20BF-222K		3RC20BF222K										
R-310	Same as R-302	Grid Filter of 3rd IF Tube V-303 (Part of Terminal Board E-306)	JAN RC20BF-104K		3RC20BF104K										
R-311	Same as R-210	Cathode of 3rd IF Tube V-303	JAN RC20BF-271K		3RC20BF271K										
R-312	Same as R-304	Screen of 3rd IF Tube V-303 (Part of Terminal Board E-307)	JAN RC20BF-222K		3RC20BF222K										
R-313	Same as R-304	Plate of Third IF Tube V-303 (Part of Terminal Board E-307)	JAN RC20BF-222K		3RC20BF222K										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
										BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-314	Same as R-210	Cathode of Fourth IF Tube V-304	JAN RC20BF-271K		3RC20BF271K										
R-315	Same as R-304	Screen of Fourth IF Tube V-304 (Part of Terminal Board E-307)	JAN RC20BF-222K		3RC20BF222K										
R-316	Same as R-304	Plate of Fourth IF Tube V-304 (Part of Terminal Board E-307)	JAN RC20BF-222K		3RC20BF222K										
R-317	Resistor: fixed, composition, 470,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, two axial wire leads 1.5" lg	AVC of Second Detector Tube V-305	JAN RC20BF-474K JAN R11		3RC20BF474K	722	722318-94	R-317,318,404, 416,512	5	1	3	1	15	3	25
R-318	Same as R-317	AVC Filter of Second Detector Tube V-305	JAN RC20BF-474K		3RC20BF474K										
R-319	Resistor: fixed, wire wound, insulated, 33.33 ohms ±2%, 1/4 watt, 3/8" lg, 11/64" diam, two axial wire leads 1-1/2" lg, temp coef 0.002 %/°C	For Meter Shunt Plate of 3rd IF Tube V-303	-635324-2		3Z6003C3-17	1371 Type WRI-1/4	894379-6	R-319	1	1	1	1	3	3	5
R-320	Same as R-204	Plate Dropping of Fourth IF Tube V-304	JAN RC20BF-152K		3RC20BF152K										
R-321	Resistor: fixed, composition, 470 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Series Dropping of First and Second IF Tubes V-301, 302 (Part of Terminal Board E-307)	JAN RC20BF-471K JAN R11		3RC20BF471K	207	722318-58	R-321	1	1	1	1	3	3	5
R-322	Same as R-201	Cathode of Second Detector Tube V-305 (Part of Terminal Board E-307)	JAN RC20BF-224K		3RC20BF224K										
R-323	Resistor: fixed, composition, 10,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	AVC Filter of RF Amplifier Tube V-201 (Part of Terminal Board E-308)	JAN RC20BF-103K JAN R11		3RC20BF103K	722	722318-74	R-323	1	1	1	1	3	3	5
R-324	Resistor: fixed, composition, 22,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1-1/2" lg	AVC Delay of Second Detector Tube V-305 (Part of Terminal Board E-307)	JAN RC20BF-223K JAN R11		3RC20BF223K	722	722318-78	R-324,423	2	1	1	1	6	3	10
R-325	Resistor: variable, carbon, 1500 ohms ±10%, 2 watt, three terminals, body 1-1/8" diam x 9/16" wide, shaft 0.250" diam x 9/16" lg	Cathode Bias Control of 2nd IF Tube V-302	-633232-10		3Z7315-8	722 Type J	430116-9	R-325	1	1	1	1	3	3	5

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
										BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-401	Same as R-302	Detector Load of Second Detector AVC Tube V-305	JAN RC20BF-104K		3RC20BF104K										
R-402	Same as R-302	Detector Load of Second Detector AVC Tube V-305	JAN RC20BF-104K		3RC20BF104K										
R-403	Same as R-201	Filter of Voltmeter Rectifier Noise Limiter Tube V-401	JAN RC20BF-224K		3RC20BF224K										
R-404	Same as R-317	Filter of Voltmeter Rectifier Noise	JAN RC20BF-474K		3RC20BF474K										
R-405	Same as R-204	Bleeder of First AF and Squelch Tube V-402	JAN RC20BF-152K		3RC20BF152K										
R-406	Resistor: fixed, composition, 1.0 meg ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Resistor V-402 Squelch Grid	JAN RC20BF-105K JAN R11		3RC20BF105K	722	722318-98	R-406,407	2	1	1	1	6	3	10
R-407	Same as R-406	Resistor V-402 1st AF Grid	JAN RC20BF-105K		3RC20BF105K										
R-408	Same as R-304	Cathode of First AF and Squelch Tube V-402	JAN RC20BF-222K		3RC20BF222K										
R-409	Same as R-201	Silencer Plate of First AF and Squelch Tube V-402 (Part of Terminal Board E-307)	JAN RC20BF-224K		3RC20BF224K										
R-410	Not Used														
R-411	Resistor: fixed, composition, 15,000 ohms ±10%, 5 watt, vitreous enamel covered fired on ceramic coil, spiral grooved 2" lg x 5/8" diam, with two radial wire leads 1-3/4" lg	IF Plate Dropping	-634718-10		3Z6615-154	738 Type 5X	891832-19	R-411	1	1	1	1	3	3	5
R-412	Resistor: fixed, composition, 4700 ohms ±5%, 5 watt, vitreous enamel covered, fired on ceramic coil and grooved 2" lg x 5/8" diam, with two radial wire leads 1-3/4" lg	Bleeder	-633033-472		3Z6470-33	738 Type 738	891832-6	R-412,415,422	3	1	2	1	9	3	15
R-413	Same as R-302	Plate of First AF and Squelch Tube V-402	JAN RC20BF-104K		3RC20BF104K										
R-414	Resistor: fixed, composition, 82,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, with two axial wire leads 1.5" lg	Plate Dropping of First AF and Squelch Tube V-402	JAN RC20BF-823K JAN R11		3RC20BF823K	722	722318-85	R-414	1	1	1	1	3	3	5

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

		PARTS										SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		R-415	Same as R-412	Bleeder	-633033-472		3Z6470-33										
		R-416	Same as R-317	Grid of AF Output Tube V-403 (Part of Terminal Board E-411)	JAN RC20BF-474K		3RC20BF474K										
		R-417	Resistor: fixed, composition, 560 ohms ±10%, 1 watt, insulated, small, 0.750" max lg x 0.280" max diam, with two axial wire leads 1.5" lg	Cathode of AF Output Tube V-403	JAN RC30BF-561K JAN R11		3RC30BF561K	722	722333-59	R-417	1	1	1	1	3	3	5
		R-418	Resistor: fixed, composition, 12,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, with two axial wire leads 1.5" lg	Bleeder of First AF and Squelch Tube V-402	JAN RC20BF-123K JAN R11		3RC20BF123K	722	722318-75	R-418	1	1	1	1	3	3	5
		R-419	Resistor: fixed, composition, 27,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, with two axial wire leads 1.5" lg	Bleeder of First AF and Squelch Tube V-402 (Part of Terminal Board E-307)	JAN RC20BF-273K JAN R11		3RC20BF273K	722	722318-79	R-419	1	1	1	1	3	3	5
		R-420	Same as R-301	Bleeder (Part of Terminal Board E-303)	JAN RC20BF-563K		3RC20BF563K										
		R-421	Not Used														
		R-422	Same as R-412	Bleeder	-633033-472		3Z6470-33										
		R-423	Same as R-324	AF Filter of AF Output Tube V-403 (Part of Terminal Board E-307)	JAN RC20BF-223K		3RC20BF223K										
		R-424 to R-426	Not Used														
		R-427	Resistor: fixed, wire wound, insulated 4.05 ohms ±2%, 1/4 watt, 3/8" lg, 11/64" diam, two axial wire leads 1-1/2" lg, temp coef 0.002%/°C	For Meter Shunt Plate of 2nd Tripler Tube V-502	-634714-2		3Z5994-37	1371 Type WRI-1/4	894379-3	R-427	1	1	1	1	3	3	5
		R-428 to R-431	Not Used														
		R-432	Resistor: variable, composition, 500,000 ohms ±10%, 2 watt, 1-1/8" diam x 9/16" thk, shaft 0.250" diam x 1-1/4" lg	Output Level Control Grid of 1st AF and Tube V-402	-633233-504		3Z7498-50.49	722 Type J	430116-6	R-432	1	1	1	1	3	3	5
		R-433	Resistor: fixed, composition, 3000 ohms ±5%, 1/4 watt, insulated, 0.406" max lg, 0.170" max diam, two axial wire leads 1-1/2" lg	For Meter Shunt of Grid of Tripler Tube V-203	JAN RC10BE-302J JAN R11		3RC10BE302J	722	722302-170	R-433	1	1	1	1	3	3	5

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
										BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-434	Resistor: fixed, wire wound, insulated 200 ohms ±1%, 1/4 watt, 3/8" lg x 11/64" diam, two axial wire leads 1-1/2" lg, temp coef 0.002%/°C	For Meter Multiplier	-634715-1		3Z60020-239	1371 WRI-1/4	894379-7	R-434	1	1	1	1	3	3	5
R-435 & R-436	Not Used														
R-437	Resistor: variable, composition, 25,000 ohms ±10%, 2 watt, 1-1/8" diam x 9/16" thk, shaft 0.250" diam x 1-1/4" lg	Silencer Level	-633234-10		2Z7270.76	722 Type J	430116-8	R-437	1	1	1	1	3	3	5
R-438	Resistor: fixed, composition, 0.51 ohms ±5%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, two **axial** wire leads 1-1/2" lg	350 V Meter Multiplier	JAN RC20BF-514J JAN R11		3RC20BF514J	731	722318-224	R-438	1	1	1	1	3	3	5
R-439	Resistor: fixed, composition, 15,000 ohms ±5%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, two axial wire leads 1-1/2" lg	For 12 V DC Meter Multiplier	JAN RC20BF-153J JAN R11		3RC20BF153J	731	722318-187	R-439	1	1	1	1	3	3	5
R-440	Resistor: fixed, composition, 18,000 ohms ±5%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, two axial wire leads 1-1/2" lg	12 V DC Meter Multiplier	JAN RC20BF-183J JAN R11		3RC20BF183J	722	722318-189	R-440	1	1	1	1	3	3	5
R-501 to R-503	Not Used														
R-504	Resistor: fixed, composition, 10,000 ohms ±10%, 2 watt, insulated, 11/16" lg x 5/16" diam, two axial wire leads 1-1/2" lg	Plate Filter V-502	JAN RC40BF-681J "For Replacement use Allen Bradley Only"		3Z6610-283	722	99126-74	R-504,507,527, 528	4	1	2	1	12	3	20
R-505	Not Used														
R-506	Same as R-204	Grid Filter of Second Tripler	JAN RC20BF-152K		3RC20BF152K										
R-507	Same as R-504	V-503 Plate Dropping	JAN RC40BF-681J "For Replacement use Allen Bradley Only"		3Z6610-283										
R-508	Resistor: fixed, composition, 47,000 ohms ±10%, 1/2 watt, insulated, small, 0.249" max diam x 0.468" max lg, two axial wire leads 1.5" lg	Grid Filter of Second Tripler	JAN RC20BF-473K JAN R11		3RC20BF473K	722	722318-82	R-508	1	1	1	1	3	3	5
R-509	Same as R-304	Grid Filter of First Tripler Tube V-503	JAN RC20BF-222K		3RC20BF222K										

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-510	Resistor: fixed, composition, 3300 ohms ±5%, 2 watt insulated, small, 11/16" lg x 5/16" diam, two axial wire leads 1-1/2" lg	Plate Filter of Oscillator Doubler Tube V-504	JAN RC40BF-332J "For Replacement use Allen Bradley Only"		3Z6330-34	722 Type HB	99126-171	R-510	1	1	1	1	3	3	5
R-511	Resistor: fixed, composition, 150 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, with two axial wire leads 1.5" lg	Cathode of Oscillator Doubler Tube V-504 (Part of Terminal Board E-510)	JAN RC20BF-151K JAN R11		3RC20BF151K	722	722318-52	R-511	1	1	1	1	3	3	5
R-512	Same as R-317	Grid of Oscillator Doubler Tube V-504 (Part of Terminal Board E-510)	JAN RC20BF-474K		3RC20BF474K										
R-513	Resistor: fixed, composition, 47,000 ohms ±5%, 1 watt, insulated, small, 0.750" max lg x 0.280" max diam, two axial wire leads 1-1/2" lg	Screen of Oscillator Doubler Tube V-504 (Part of Terminal Board E-511)	JAN RC30BF-473J JAN R11		3RC30BF473J	722	722333-199	R-513	1	1	1	1	3	3	5
R-514 to R-520	Not Used														
R-521	Resistor: fixed, composition, 10,000 ohms ±10%, 2 watt, insulated, small, 1.41" max lg x 0.405" max diam, with two axial wire leads 1.5" lg	Plate Dropping of Second Tripler Tube V-502	JAN RC40BE-103K JAN R11		3RC40BE103K	321	722352-74	R-521,522	2	1	2	1	6	3	10
R-522	Same as R-521	Plate Dropping of Second Tripler Tube V-502 (Part of Terminal Board E-512)	JAN RC40BE-103K		3RC40BE103K										
R-523	Resistor: fixed, composition, 6800 ohms ±5%, 2 watt, insulated, 11/16" lg x 5/16" diam, two axial wire leads 1-1/2" lg	Plate Dropping of First Tripler Tube V-503 (Part of Terminal Board E-511)	JAN RC40BF-682J		3Z6568-33	722	99126-179	R-523,526	2	1	1	1	6	3	10
R-524	Resistor: variable, composition, 500 ohms ±10%, 2 watt, three term, body 1-1/8" max diam x 9/16" d, shaft 0.250" diam x 9/16" lg	For I-601	-635150-10		3Z6050-195	722 Type J	430116-10	R-524	1	1	1	1	3	3	5
R-525	Not Used														
R-526	Same as R-523	V-503 Plate Dropping	JAN RC40BF-682J		3Z6568-33										
R-527	Same as R-504	V-502 Plate Filter	JAN RC40BF-681J "For Replacement use Allen Bradley Only"		3Z6610-283										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
												BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		R-528	Same as R-504	Plate Dropping	JAN RC40BF-681J "For Replacement use Allen Bradley Only"		3Z6610-283										
		R-529	Resistor: fixed, composition, 47 ohms ±5%, 2 watt, insulated, 11/16" lg x 5/16" diam, two axial wire leads 1-1/2" lg	Filament Balance	JAN RC40BF-470J			722 Type HB	99126-127	R-529,532	2	1	1	1	6	3	10
		R-530	Tube: ballast, glass, 4.08 to 9.08 v, 290 to 310 ma, T-9 bulb 3-5/16" max lg overall including 9/16" contact pins x 1-5/16" max diam, octal base	Regulator for V-502,503				35 Type 3V4	8856255-1	R-530	1	1	1	1	3	3	5
		R-531	Same as R-207	V-502 Grid	JAN RC20BF-333K		3RC20BF333K										
		R-532	Same as R-529	Filament Balance	JAN RC40BF-470J												
		R-601	Resistor: fixed, discohm, 3000 ohms ±5%, 1-3/8" OD, 3/8" thk, 3/16" diam hole with 13/32" diam csk 1/8" d in center, two term lugs	Selector Motor Lines	-635325-5		3Z6300-191	752	895024-1	R-601	1	1	1	1	3	3	5
		R-602	Not Used														
		R-603	Resistor: fixed, composition, 10,000 ohms ±5%, 5 watt, vitreous enamel covered, 2" lg x 5/8" diam, two radial wire leads 1-3/4" lg	Voltage Regulator	-633032 JAN R11		3Z6610-275	738 Type 5X	891832-5	R-603	1	1	1	1	3	3	5
		R-801	Resistor: fixed, wire wound, 335 ohms ±5%, 55 watt, 4-3/4" lg overall x 1-3/16" wd x 5/8" h, with two radial leads 7/16" lg, two axial mtg term with two 0.196" diam holes on 4-1/4" centers	For Power Supply Dropping	-635323-5 JAN R26		3Z6033E5	281	894368-2	R-801	1	1	1	1	3	3	5
		R-802	Resistor: fixed, composition, 1200 ohms ±10%, 1 watt, insulated, large, 1.28" max lg x 0.310" max diam with two axial wire leads 1.5" lg	For Dynamotor Filter	JAN RC31BE-122K JAN R11		3RC31BE122K	722	722337-63	R-802	1	1	1	1	3	3	5
		R-803	Not Used														
		R-804	Resistor: fixed, wire wound, 400 ohms ±5% 30 watt, vitreous enamel covered, 2-1/2" lg overall x 1-3/16" wd x 5/8" thk with two radial term 7/16" lg, two axial mtg lugs with 0.196" diam mtg holes on 2" centers	For Voltage Regulator	-635314-5 JAN R26		3Z6040-84	281	875852-2	R-804,807	2	1	1	1	6	3	10
		R-805	Resistor: fixed, composition, 200 ohms ±5%, 5 watt, vitreous enamel covered 2" lg x 5/8" diam, two radial wire leads 1-3/4" lg	Bleeder	-635321-5 JAN R11		3Z6020-245	738 Type 5X	891832-2	R-805	1	1	1	1	3	3	5
		R-806	Not Used														
		R-807	Same as R-804	For B-602	-635314-5		3Z6040-84										

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

		PARTS										SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		R-808	Resistor: fixed, wire wound, 190 ohms ±5%, 30 watt, vitreous enamel covered 2-1/2" lg overall x 1-3/16" max wd x 5/8" thk, including two radial term and two axial mtg lugs, two 0.196" diam mtg holes on 2" centers	Voltage Regulator	-635320-5 JAN R26		3Z6019-5	281 BR-1-1/4 752 1-1/4 Strip Bulletin #23	875852-13	R-808	1	1	1	1	3	3	5
		S-401	Switch: rotary, single pole, single throw 1 amp, 250 v, 3 amps, 125 v, 1-9/32" wd x 1-27/32" lg x 3/4" thk, shaft 0.250" diam x 1-5/16" lg, "ON" position is at extreme CW position	Switch Silencer	-24568		3Z9692-1561	47 Type 1516	888158-1	S-401	1	1	1	2	1	3	1
		S-402A	Switch: rotary, two ceramic wafers, 12 positions, spring silver alloy contacts, solid silver rotor blades, shaft 1-1/4" lg x 0.250" diam bushing 3/8"-32 thds	Voltmeter Selector Switch			3Z9825-82.28	451	433522-1	S-402A,402B	2	1	1	2	1	3	2
		S-402B	Same as S-402A	Voltmeter Selector Switch			3Z9825-82.28										
		S-501	Not Used														
		S-502	Switch assem: crystal, consisting of three plate assem, gear assem, gear, two switch drive shafts, two switch drive gears, idler gear, socket assem, two wafer assem, four plate spacers	For Crystal Selector			3Z9903A-35.5	1	722600-501	S-502	1	1	1	2	1	3	1
		S-502A	Wafer assem: ceramic, crystal switch 1-15/16" lg x 1-5/8" wd x 0.429" h, rotor blades, coin silver, contacts spring silver	Crystal Selector Wafer Switch			3Z9903E-24	695	889279-501	S-502A,502B	2	1	1	2	1	3	2
		S-502B	Same as S-502A	Crystal Selector Wafer Switch			3Z9903E-24										
		S-601	Switch assem: homing selector, consisting of two plate assem, two idler gears, switch, wafer, shaft, switch drive gear	Homing Selector			3Z9903A-35.4	1	717815-501	S-601	1	1	1	2	1	3	1
		S-601A	Switch: rotor, 12 contacts, rotor blades, coin silver, contacts spring silver, body of laminated phenolic 1-27/32" diam, rotor shaft hole 0.250" diam x 0.187" flat	Homing Switch (Part of S-601)			3Z9825-82.29	451	430759-1	S-601A	1	1	1	2	1	3	1

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS,JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		S-601B	Switch, rotary, selector, 12 positions, laminated phenolic rotor blades coin silver, contacts spring silver, 1-1/2" diam x 1.562" between mtg holes x 1-3/32" wd, shaft 0.249" diam x 17/32" lg	Frequency Selector Switch (Part of S-601)			3Z9825-82.27	451	433904-1	S-601B	1	1	1	2	1	3	1
		S-602	Not Used														
		S-603	Switch assem: limiter, consisting of two plate assem, shaft assem, gear assem, switch arm assem, disc assem, arm assem, clutch disc, clutch drive pinion, switch arm clamp, gear, collar three springs, switch, clutch, gear and three studs	For Limit Assembly			3Z9903A-35.6	1	719690-501	S-603	1	1	1	2	1	3	1
		S-603A	Switch: limit, single button, two lug term, 1-1/4" lg x 19/32" wd x 17/32" h overall, three 0.093" diam mtg holes on 0.260" x 0.156" centers	Limit Switch (Part of S-603)	-24486		3Z9824-29.14	246 Cat # CR1070-C103-A3	892799-1	S-603A	1	1	1	2	1	3	1
		S-801	Not Used														
		S-802	Switch: four section, three position, sect one 25 v dc, 0.2 amp, sect two 220 v ac, 1 amp, sect three 13 v dc, 13 amp, continuous 75 amp intermittent sect four 400 v dc, 0.2 amp, shaft 0.249" diam x 3/8" lg, 2-1/4" lg x 2-13/16" wd x 2-3/16" thk	Power			3Z9825-82.34	47	441694-1	S-802	1	1	1	2	1	3	1
		V-201	Tube: electron, midget remote cutoff, pentode, miniature button 7-pin base	Receiver RF Amplifier	JAN 9003		2J.9003	516		V-201	1	1	2	1	3		
		V-202	Tube: electron, sharp cutoff, pentode, miniature button 7-pin base	1st Detector	JAN 6AK5		2J6AK5	669		V-202	1	1	2	1	3		
		V-203	Tube: electron, HF twin triode, miniature button 7-pin base	Receiver Tripler	JAN 6J6		2J6J6	516		V-203	1	1	2	1	3		
		V-301	Tube: electron, RF pentode, semi-remote cutoff, small wafer octal 8-pin phenolic base	1st IF	JAN 12SG7		2J12SG7	516		V-301,302,303, 304	4	1	8	1	12		
		V-302	Same as V-301	2nd IF	JAN 12SG7		2J12SG7										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
V-303	Same as V-301	3rd IF	JAN 12SG7		2J12SG7										
V-304	Same as V-301	4th IF	JAN 12SG7		2J12SG7										
V-305	Tube: electron, twin diode, small wafer octal 7-pin phenolic base	Second Detector AVC	JAN 12H6		2J12H6	516		V-305, 401	2	1	4	1	6		
V-401	Same as V-305	Voltmeter Rectifier Noise Peak Limiter	JAN 12H6		2J12H6										
V-402	Tube: electron, twin triode high mu amplifier, intermediate shell octal 8-pin phenolic base	1st AF and Squelch	JAN 12SL7GT		2J12SL7GT	516		V-402	1	1	2	1	3		
V-403	Tube: electron, beam power amplifier, small wafer octal 7-pin phenolic base	Tube (Receiver AF Output)	JAN 12A6		2J12A6	516		V-403	1	1	2	1	3		
V-501	Not Used														
V-502	Tube: electron, HF power triode, miniature button 7-pin base	2nd Tripler	JAN 6C4		2J6C4	516		V-502, 503	2	1	4	1	6		
V-503	Same as V-502	1st Tripler	JAN 6C4		2J6C4										
V-504	Tube: electron, video power amplifier pentode, small wafer octal 8-pin base	Oscillator Doubler	JAN 6AG7Y		2J6AG7Y	516		V-504	1	1	4	1	6		
W-201	Not Used														
W-202	Cable assem: consisting of cable type RG 58/U, w/jack type UG281/U on one end, 14" lg overall	Antenna Panel Jack to RF Unit	-62335		1F425-58.180	218	439521-503	W-202	1	1	1	2	1	2	2
W-202A	Cable: RF, coaxial, flexible, impedance 53.5 ±2.5 ohms, single AWG #20 solid copper axial conductor, solid type "A" dielectric 0.116" diam single tinned copper wire braid 0.150" diam, with black synthetic resin jacket 0.195" diam x 48" lg	Transmission Line	AN RG 58/U JAN C17		1F425-58	1	894310-188	W-201A	1	1	1	2	1	2	2
W-401	Cord: headset extension, with jack and plug approx 65-1/8" lg, signal corps type PL 55 for plug and JK 26 for jack	For Headset Extension	-49534		3E4035-83	669	888765-1	W-401	1	1	1	2	2	2	4

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
												EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		W-801	Cable assem: battery , consisting of cable two conductor, #3 AWG one white, one black, 19/7/.0201" strands, aluminum 2/64 vinylite VE 5901, 0.008" aluminum, shielding braid, hipot: conductor to shield 1500 v, cable 60" lg, one aluminum connector, two aluminum clamping rings, one waterproof clamp assem, and two spring clips 2-5/8" lg, 1" jaw spread with neoprene insulators, used over clips, one red and one black	For Battery to Dynamotor	-62223		3E4400-18	1	722658-501	W-801	1	1	1	2	1	2	2
		W-802	Not Used														
		W-803	Cable assem: power, 5 leads, outer jacket of vinylite VE 5904, 10-1/2" lg x 1-19/32" diam overall, consisting of one cable, two connectors, two clamps	Power Adapter Cable	-62307		3E4400-23	1	728123-501	W-803	1	1	1	2	1	2	2
		W-901	Cable assem: consisting of nine conductor, cable 96" lg, 3 of AWG #12 white, black orange, 6 of AWG #20 green, red, blue, brown, slate, yellow, copper shielding braid and vinylite cover, one AN3106-22-16S-101W, nine contact connector ea end, two clamp assem and two soldering ferrules	For Power to Receiver	-62225		3E4400-22	1	722625-502	W-901	1	1	1	2	1	2	2
		X-201	Socket: tube, miniature 7-pin type, ceramic, with metallic center shield, seven contacts, 1-1/8" x 0.900" x 1-9/32"	Receiver RF Amplifier Tube	-49956 JAN S28		2Z8677.75	755 Type 102M	883996-1	X-201,202,203, 502,503	5	1	3	2	3	3	5
		X-202	Same as X-201	First Detector Tube	-49956		2Z8677.75										
		X-203	Same as X-201	Receiver Tripler Tube	-49956		2Z8677.75										
		X-301	Socket: steatite ceramic, one #4 retaining ring, eight contacts phosphor bronze silver plated, 1-1/4" diam x 51/64" lg	For First IF Tube	-49373 RE13A317 Grade G		2Z8678.34	30 SS-8M	856956-6	X-301,302,303, 304,305,401, 402,403,504, 508	10	1	5	2	5	3	9
		X-302	Same as X-301	For Second IF Tube	-49373		2Z8678.34										
		X-303	Same as X-301	For Third IF Tube	-49373		2Z8678.34										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
												BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		X-304	Same as X-301	For Fourth IF Tube	-49373		2Z8678.34										
		X-305	Same as X-301	For Second Detector AVC Tube	-49373		2Z8678.34										
		X-401	Same as X-301	For Voltmeter Rectifier	-49373		2Z8678.34										
		X-402	Same as X-301	For First AF and Squelch Tube	-49373		2Z8678.34										
		X-403	Same as X-301	For Receiver AF Output Tube	-49373		2Z8678.34										
		X-501	Not Used														
		X-502	Same as X-201	Second Tripler Tube	-49956		2Z8677.75										
		X-503	Same as X-201	First Tripler Tube	-49956		2Z8677.75										
		X-504	Same as X-301	Oscillator Dubler Tube Socket	-49373		2Z8678.34										
		X-505	Not Used														
		X-506	Socket: female contact, type MFE, phenolic body, 24 contacts, beryllium copper silver plated, numbered 1 to 10, lettered A,B,W,X,Y,Z, five mtg holes with brass inserts 0.144" diam holes, 3-9/16" lg x 2-1/2" wd x 0.406" thk, excluding contacts	Crystal Oven	-49623 17P4 MFE		2Z8761-47	218	433174-1	X-506	1	1	1	2	1	3	1
		X-507	Not Used														
		X-508	Same as X-301	For R-530	-49373		2Z8678.34										
		X-601	Lampholder: miniature bayonet base, brass, 3/8" ID of body, two term insulated from mtg bracket, 0.187" diam mtg hole 27/32" from center of body	For I-601			2Z5883-320	382	893903-1	X-601	1	1	1	2	1	3	1
		Y-501	Crystal Unit	Crystal Channel 1	-40163			GFE		Y-501,502,503, 504,505,506, 507,508,509, 510	10						
		Y-502	Same as Y-501	Crystal Channel 2	-40163												
		Y-503	Same as Y-501	Crystal Channel 3	-40163												
		Y-504	Same as Y-501	Crystal Channel 4	-40163												

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
										BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
Y-505	Same as Y-501	Crystal Channel 5	-40163												
Y-506	Same as Y-501	Crystal Channel 6	-40163												
Y-507	Same as Y-501	Crystal Channel 7	-40163												
Y-508	Same as Y-501	Crystal Channel 8	-40163												
Y-509	Same as Y-501	Crystal Channel 9	-40163												
Y-510	Same as Y-501	Crystal Channel 10	-40163												
Y-501A to Y-510A	Box: Navy Type -10527, containing 90 crystal units Navy Type -40163	Comprises the Additional Crystals to be used or Replaced in E-514 Accessories of Y-501 to Y-510				GFE		Y-501A to Y-510A	1						
Y-501B to Y-510B	Box: Navy Type -10527, containing 100 crystal units, Navy Type -40163	Comprises of a Spare for Each of the 100 Crystals Supplied in the Equipment and Accessories Spares for Y-501 to Y-510				GFE		Y-501B to Y-510B		1	1				
Z-200	RF assem: consisting of one condenser assem, one receptacle, 33 capacitors, three sockets, two term assem, six shields, one coil assem, plus one plug button, misc mtg hardware, approx overall dimensions 10-1/2" lg x 4-1/2" h x 2-1/16" wd	Receiver	-46269		2C8138	1	618525-501	Z-200	1	1	1	1	1	1	2
Z-301	Transformer: IF assem, consisting of one coil 5-3/4 turns AWG #18 copper wire, 16 t/in, one coil 4-3/4 turns 0.040" diam copper wire, 16 t/in, adjustable iron core assem each end, and two capacitors C-301 and C-302, enclosed in shield can 3.389" lg x 1.375" sq	For First IF	-47931		2Z9643.236	1	618106-501	Z-301	1	1	1	1	2	1	3
Z-302	Transformer: IF assem, consisting of two coils, each 4-3/4 turns AWG #18 copper wire, adjustable iron core assem each end, enclosed in shield can 3.389" lg x 1.375" sq	For Second IF	-47932		2Z9643.238	1	618106-502	Z-302	1	1	1	1	2	1	3

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS									SPARE PARTS						
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
										BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
Z-303	Transformer: IF assem, consisting of two coils, ea 4-3/4 turns AWG #18 copper wire, 16 t/in, two capacitors C-305 and C-306, adjustable iron core assem ea end, enclosed in shield can 3.389" lg x 1.375" sq	For Third IF	-47933		2Z9643.237	1	618106-503	Z-303	1	1	1	1	2	1	3
Z-304	Transformer: IF assem, consisting of two coils, ea 4-3/4 turns AWG #18 copper wire, 16 t/in, two capacitors C-307 and C-308, adjustable iron core assem ea end, enclosed in shield can 3.389" lg x 1.375" sq	For Fourth IF	-47934		2Z9643.237	1	618106-504	Z-304	1	1	1	1	2	1	3
Z-305	Transformer: IF assem, consisting of one coil 5-1/4 turns AWG #18 copper wire, 16 t/in, one coil 4-1/4 turns AWG #18 copper wire, 16 t/in, two capacitors C-309 and C-310, adjustable iron core assem ea end, enclosed in shield can 3.389" lg x 1.375" sq	Diode IF	-47935		2Z9643.239	1	618106-505	Z-305	1	1	1	1	2	1	3
Z-401	Transformer: output filter assem consisting of three coils, ea with 5100 mmf capacitor connected in parallel, coil one; 3400 turns AWG #39 HF wire, 428 ohms d-c resistance, coil two; windings 1/2/3 560 turns AWG #35E wire, 36 ohms d-c resistance, 258 turns AWG #37 E wire, 29 ohms d-c resistance, 2180 turns AWG #39 E wire, 448 ohms d-c resistance, coil three; 5500 turns AWG #41 HF wire, 1102 ohms d-c resistance, hipot: coils to cores 1500 v, sealed in can 3-29/32" h x 2-11/16" lg x 1-3/4" wd, including mtg flange with two 0.199" diam holes on 2-5/16" mtg/c term extend 31/64"	For Receiver Output	-301848 RE13A553B		2Z1892-28	1	901816-501	Z-401	1	1	1	1	2	1	3
Z-402	Filter: phone jack assem, consisting of brass box 1-7/8" lg, 1.210" wd, 1.400" h, three covers, jack, two RF choke coils, three capacitors 1800 mmf ea	For Receiver Output	-53277		3Z1893-29.3	1	722615-501	Z-402	1	1	1	1	1	1	2
Z-500A	Not Used														

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		TENDER		STOCK	
										BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
Z-500B	Multiplier assem: consisting of one variable condenser, two transformer assem, one cover assem, four sockets, four term bd assem, six term, two insulators, one term assem, one coil assem, 17 capacitors, one tube clamp, one chassis assem, one resistor, and misc hardware, chassis 0.040" thk, stock, 10.107" lg inside x 4.046" wd inside x 2.562" d inside	Multiplier Assembly	-35116		2C387	1	618916-502	Z-500B	1			1	1	1	2
Z-501	Transformer assem: consisting of one coil 6-7/8 turns #11 copper wire, 6 t/in, one capacitor C-516, adjustable magnetite core assem bottom end, enclosed in shield can 2.999" h x 1.375" sq	Plate Coil of First Tripler Tube V-503	-47938		3C1084H.46	1	618106-508	Z-501	1	1	1	1	2	1	3
Z-601 & Z-602	Not Used														
Z-603	Connector assem: bypass capacitor, 2-3/16" lg x 1-1/2" sq overall, consisting of connector, housing, #12-28 nut, capacitor assem, lockwasher, bushing, four 0.156" mtg holes on 1.156" mtg/c	For Output Filter	-483312A		2Z3023-46	1	442840-2	Z-603	1	1	1	1	1	1	2
Z-604	Connector assem: consisting of type AN 3102 connector, nine male pin type contacts, aluminum housing, six high "K" type capacitors 1800 mmf -20% +50% 350 vdcw, two bus wires, one 0.0640" diam x 6" lg, other 0.102" diam x 2" lg, and hardware, 2-3/16" lg x 1-5/8" sq overall, four 0.156" diam holes on 1.250" x 1.250" mtg/c	Receiver Power Jack Filter	-483287A		2Z3029-24	1	443889-2	Z-604	1	1	1	1	1	1	2
Z-604A	Cap assem: consisting of one amphenol cap, and 3" #10 nickel silver bead chain, cap 1-3/8" diam x 7/16" wd, similar to amphenol cap and chain 9760-20 tapped w/1-1/4"-18 thds, including one neoprene washer 3/32" thk	Cap for Z-604			2Z1607-61	701	433921-1	Z-604A	1					1	1

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS												SPARE PARTS					
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP. BOX NO.	EQUIP. QUAN.	TENDER BOX NO.	TENDER QUAN.	STOCK BOX NO.	STOCK QUAN.
		Z-801	Suppressor assem: consisting of coil, 8 turns AWG #10 tinned copper wire, wound over resistor, fixed, composition 27 ohms, 1 watt, insulated, assem 2.36" lg x 1/2" OD	Battery Input Suppressor			3Z1891-11.8	1	888570-501	Z-801	1			1	1	1	1
		Z-1000	Antenna assem: consisting of conductor assem, two brackets fitted over tube assem, connector assem with screw ring, two rods, one 9.188" lg other 9.000" lg, ea 1/2" diam with junction and insulator assem, assem "T" shaped, overall dimen 19-7/8" lg x 19.688" wd	Dipole Antenna	-66147		2A292-10	1	618539-501	Z-1000	1			1	1	1	2
			Spare parts box	Spare Parts Box					618982-512				1				
			Spare parts box	Spare Parts Box					618982-507						1		
			Spare parts box	Spare Parts Box					618947-521						1		

TABLE 8-4 APPLICABLE COLOR CODES & MISCELLANEOUS DATA

RESISTOR AND CAPACITOR CODES

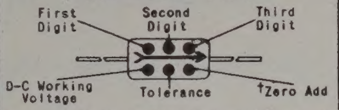
MICA CAPACITOR CODING

Values of capacitance and tolerance are coded identically on both R.M.A. 6 dot and A.W.S. coded capacitors. Only the coding of the sixth (lower left) dot differs between the two.

R. M. A. CODE

R.M.A. coded capacitors have 3 or 6 dots located as shown below.

6 DOT COLOR CODE

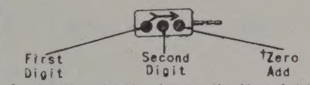


On capacitors bearing 6 dots, the upper 3 dots become the first 3 figures. When the number of zeros determined by the "Zero Add" (lower right) dot is added, the capacitance in micromicrofarads (mmfd) is obtained. The other two dots show the percentage tolerance and the voltage rating.

EXAMPLE:

Brown, Red, Green Green, Silver, Brown	125 + 0 = 1250 mmfd capacitance 10% tolerance 500 v d-c working voltage

3 DOT COLOR CODE



On capacitors bearing 3 dots, the first 2 dots become the first two figures. When the number of zeros determined by the "Zero Add" (third) dot is added, the capacitance in micromicrofarads (mmfd) is obtained. All 3 dot capacitors are rated at 500 v d-c working voltage.

EXAMPLE:

Red, Green, Brown	25 + 0 - 250 mmfd capacitance (inferred tolerance) 500 v d-c working voltage

A. W. S. CODE

A.W.S. coded capacitors may have a coded "Type Designation" or 6 colored dots as shown below.

TYPE DESIGNATION

CM 20 A 050 M

Component — Case — Characteristic — Capacitance — Tolerance

COMPONENT: All mica capacitors are identified by "CM".

*CASE: Identifies external shape and dimensions.

*CHARACTERISTIC: Identifies temperature coefficient and "Q".

CAPACITANCE:

The first 2 digits are the first 2 figures of the capacitance, in mmfd. The third determines the number of zeros to add. If more than 3 digits are used, all except the last are figures of capacitance. The last determines the number of zeros to add.

TOLERANCE:

Designation	Tolerance
G	±2%
J	±5%
K	±10%
M	±20%

EXAMPLE: The above type designation identifies the capacitance as 5 mmfd and the tolerance as 20 per cent.

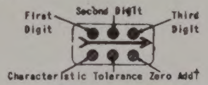
**For specific information see publication C75.3 - 1942 of the American Standards Association.*

6 DOT COLOR CODE

EXAMPLE:

Black	Orange	Orange
Black	Silver	Red

033 + 00 = 3300 mmfd capacitance
10% tolerance
"A" characteristic

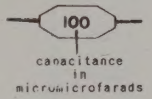


R. C. A. CODE

for mica capacitors of the shape shown below

The capacitance in micromicrofarads (mmfd) is stamped on the case. The color of the numbers shows the tolerance, as follows:

Green . . . 2.5% Blue 10%
Black . . . . 5% Yellow . . . 20%
Red . . . 30%



† *When the "ZERO ADD" color is GOLD, multiply the preceding digits by 0.1 for capacitance in mmfd; when the "ZERO ADD" color is SILVER, multiply by 0.01*

COLOR IDENTIFICATION FOR MICA CAPACITORS

COLOR	DIGITS and ZERO ADD	TOLERANCE R.M.A.	TOLERANCE A.W.S.	TOLERANCE R.C.A. mica	D-C VOLTAGE (R.M.A.)	CHARACTERISTIC (A.W.S.)
BLACK	0			5%		A
BROWN	1	1%			100	B
RED	2	2%	2% (G)		200	C
ORANGE	3	3%			300	D
YELLOW	4	4%		20%	400	E
GREEN	5	5%		2½%	500	F
BLUE	6	6%		10%	600	G
VIOLET	7	7%			700	
GRAY	8	8%			800	
WHITE	9	9%			900	
GOLD	†	5%	5% (J)		1000	
SILVER	†	10%	10% (K)		2000	
NO COLOR		20%	20% (M)		500	

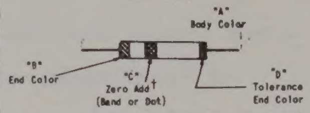
†When the "ZERO ADD" color is GOLD, multiply the number obtained from "A" and "B" by 0.1 to get capacitance in mmfd; when it is SILVER; multiply the number by 0.01.

RESISTOR CODING

(Composition and Low Power Wire Wound Resistors)

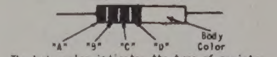
THE R.M.A. CODING AND A.W.S. CODING FOR THESE RESISTORS ARE IDENTICAL

FIRST SYSTEM



Tolerance may not be given; in which case there will be no "D" band.

SECOND SYSTEM



The body color indicates the type of resistor, and is coded as follows:

BODY COLOR	TYPE
Black	Composition, non-insulated
Any Color but Black	Composition, insulated
Chocolate Brown	Wire wound, insulated

TO FIND RESISTANCE IN OHMS FROM COLOR CODING:

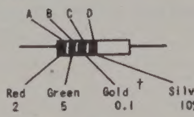
Obtain the digits identified by the colors of "A", "B", and "C" from the following table:

COLOR IDENTIFICATION

COLOR	Digit or Zero Add	COLOR	Digit or Zero Add	Tolerance
Black	0	Violet	7	
Brown	1	Gray	8	
Red	2	White	9	
Orange	3	Gold	†	5%
Yellow	4	Silver	†	10%
Green	5	No Color		20%
Blue	6			

† When the "ZERO ADD" color is GOLD, multiply the number obtained from "A" and "B" by 0.1 to get resistance in ohms; when it is SILVER; multiply the number by 0.01.

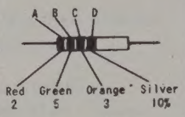
EXAMPLE



A B x C = 25 x 0.1 = 2.5
Resistance is 2.5 ohms
Tolerance: 10 per cent

EXAMPLE

The first two digits "A" and "B" become the first two numbers of the resistance. The ZERO ADD digit, "C", gives the number of zeros to add after the first two numbers. (If the ZERO ADD color is GOLD or SILVER, it becomes a multiplier. See note †)



A B + C zeros =
25 + 3 zeros = 25,000
Resistance is 25,000 ohms
Tolerance: 10 per cent

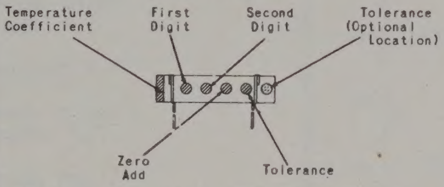
RCA CERAMIC CAPACITOR CODING

COLOR IDENTIFICATION

COLOR	DIGIT	ZERO ADD	TOLERANCE Note 1	TOLERANCE Note 2	TEMP. COEFFICIENT [MMFD/MMFD/°C.]
BLACK	0	0			0
BROWN	1	1	5%	0.5 mmfd	-0.30×10^{-4}
RED	2	2			-0.80×10^{-4}
ORANGE	3	3	2½%		-1.5×10^{-4}
YELLOW	4	4			-2.2×10^{-4}
GREEN	5	5	5%	0.5 mmfd	-3.3×10^{-4}
BLUE	6	6			-4.7×10^{-4}
VIOLET	7	7			-7.5×10^{-4}
GRAY	8		2½%	0.25 mmfd	
WHITE	9		10%	1.0 mmfd	

Note 1 - This column applies to capacitances GREATER than 10 mmfd.
Note 2 - This column applies to capacitances LESS than 10 mmfd.

COLOR CODING



The d-c working voltage of this type is 500 volts.

EXAMPLE:

4 Brown Dots Red End Color	11 + 0 = 110 mmfd capacitance ±5% tolerance -0.80×10^{-4} mmfd/mmfd/°C. temperature coefficient inferred: 500 volt rating

TABLE 8-5
LIST OF MANUFACTURERS
RDR RECEIVER EQUIPMENT (CRV-46283)

CODE NUMBER	MFR. PREFIX	NAME	ADDRESS
1	CRV	Radio Corporation of America	Camden, N.J.
28	CAS	American Lava Corp.	Cherokee Blvd and Mfrs Road Chattanooga, Tenn.
30	CPH	American Phenolic Corp.	1830 S. 54th Street Cicero, Ill.
32		American Rolling Mill Co.	Broad and Chestnut Streets Philadelphia, Pa.
37		Anchor Packing Co.	Manheim, Pa.
47	CHH	Arrow, Hart and Hegeman Electric Co.	102 Hawthorne Street Hartford, Conn.
86	CBH	Boston Gear Works, Inc.	Terminal Commerce Bldg. Philadelphia, Pa.
100		Bruno New York, Inc.	351 Fourth Avenue New York, N.Y.
113		Canfield Rubber Co.	Railroad Avenue and Gordon Street Bridgeport, Conn.
179		Doehler Die Casting Co.	Batavia, N.Y.
203	CMF	Electro Motive Corp.	Willimantic, Conn.
207	CER	Erie Resistor Corp.	644 W. 12th Street Erie, Pa.
211		Fafnir Bearing Co.	Booth Street New Britain, Conn.
218	CFT	Federal Telephone and Radio Corp.	320 Orange Street Newark, N.J.
246	CG	General Electric Co.	Schenectady, N.Y.
281	CHD	Hardwick Hindle, Inc.	40 Hermon Street Newark, N.J.
308		Hunter Pressed Steel Co.	Lansdale, Pa.
321	CIR	International Resistance Corp.	401 N. Broad Street Philadelphia, Pa.
334	CJC	Howard B. Jones Co.	2300 Wabansia Avenue Chicago, Ill.
371		Lord Mfg. Co.	Erie, Pa.
382	CMA	P.R. Mallory and Co., Inc. Yaxley Division	3029 E. Washington Street Indianapolis, Ind.
439		New Departure Div. of General Motors	Bristol, Conn.
451	COC	Oak Mfg. Co.	1200 N. Clybourne Avenue Chicago, Ill.
492		Pierce Roberts Rubber Co.	Trenton, N.J.
508		Quaker City Gear Works	Front and Berks Streets Philadelphia, Pa.
509	CRK	Radio Condenser Co.	Camden, N.J.
516	CRC	Radio Corporation of America	Harrison, N.J.
590	CSF	Sprague Specialties Co.	North Adams, Mass.
616	CSD	Struthers Dunn, Inc.	1321 Arch Street Philadelphia, Pa.
669	CW	Western Electric Co., Inc.	195 Broadway New York, N.Y.
		Factory	300 Central Avenue Kearney, N.J.
670	CAY	Westinghouse Electric and Mfg. Co.	3001 Walnut Street Philadelphia, Pa.
695		Santay Corp.	351 N. Crawford Avenue Chicago, Ill.
699	CUF	Ucinite Co. (Division of United Can Fastener)	1 Nevada Street Newtonville, Mass.

TABLE 8-5
LIST OF MANUFACTURERS
RDR RECEIVER EQUIPMENT (CRV-46283)

CODE NUMBER	MFR. PREFIX	NAME	ADDRESS
701		Bead Chain Mfg. Co.	Bridgeport, Conn.
713	CRY	C.P. Clare and Co.	Sunnyside and Keating Avenue Chicago, Ill.
714	CAW	Aerovox Wireless Corp.	742 Belleville Avenue New Bedford, Mass.
721	CMR	Micamold Radio Corp.	1087 Flushing Avenue Brooklyn, N.Y.
722	CBZ	Allen Bradley Co.	1326 S. 2nd Street Milwaukee, Wis.
727	CBN	Central Radio Lab Centralab	900 E. Keefe Avenue Milwaukee, Wis.
731		Allen Mfg. Co.	Hartford, Conn.
738	CCC	Continental Carbon Co.	295 Madison Avenue New York, N.Y.
		Factory	Sunray, Texas
743		Chase Shawmut Co.	Box #390 Newburyport, Mass.
752	CAO	Ward Leonard Electric Co.	6 South Street Mt Vernon, N.Y.
755	CEB	H.H. Eby Co.	4700 Stenton Avenue Philadelphia, Pa.
765		Bryant Electric Co.	Bridgeport, Conn.
768	CFA	Bussman Mfg. Co.	2538 W. University Street St Louis, Mo.
780		Dial Light Co. of America, Inc.	90 West Street New York, N.Y.
784	CLF	Littelfuse Lab.	4757 N. Ravenswood Avenue Chicago, Ill.
793	CO	Cornell Dubilier Electric Corp.	1000 Hamilton Blvd South Plainfield, N.J.
795	CPQ	Speer Resistor Corp.	Theresia Street St Marys, Pa.
830		H. A. Douglas Co.	Bronson, Mich.
834		Buffalo Forge Co.	Buffalo, N.Y.
837		Economy Fuse and Mfg. Co.	Greenview Avenue at Division Parkway, Chicago, Ill.
863		Torrington Mfg. Co.	Torrington, Conn.
887	CTN	Teleradio Engineering Corp.	484 Broome Street New York, N.Y.
906		Stevens Walden, Inc.	475 Shrewsbury Street Worcester, Mass.
961		Birtcher Corp.	Los Angeles, Calif.
1045	CGG	Galvin Mfg. Corp.	4545 W. Agusta Blvd. Chicago, Ill.
1235	CPS	Sperling Products Co.	New York, N.Y.
1358		Alliance Mfg. Co.	Alliance, Ohio
1361		Billings and Spencer	Hartford, Conn.
1364		Kings Electronics	372 Classon Avenue Brooklyn, N.Y.
1371		Jeffers Electronics	Dubois, Pa.
GFE		Government Furnished Equipment	